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To be shot

INFORMATION REQUEST WORK SHEET

Request		25X1A	Org.	Room	Ext.	Request number
Analyst			Org.	Room	Ext.	334
Priority		Date Wanted	3-11			
Description:			99045-5			
Please process into Minicard and make seven copies each			Type of Copy			
			Typeout			
			Film (N) (P)			
			Prints 9 each			

WORD STORAGE		W5		W10		W15	
W1		W6		W11		W16	
W2		W7		W12		W17	
W3		W8		W13		W18	
W4		W9		W14		W19	

WORD GROUPING REQUIREMENTS

S-16454
S-16455

Mag Count

SYMBOLS:

= = Equal to
< = Less than
> = Greater than

- = Supra Character
. = And
v = Or
N = Not

& = Extra Length Word
() = Phrase Boundary
X - End Request

OPERATION STATISTICS

OPERATION	TIME	INITIAL	SEARCH	COUNT	DISPOSITION	COUNT
Camera					Typeout released	
Processing					Minicards released (R) (C)	
Selector					Prints released	
Sorter						
Dupl. (D) (P)					Request Completed	
Enlarger						
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NPIC FM #154 (5-63)

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TCS NO. 1538 65

IB NO. 35 65

COPY 6

ChiCom

Submarine

Construction

REQUIREMENT

C-RR4-82.039

PROJECT

30971-4

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CHICOM
SUBMARINE
CONSTRUCTION

IB 35/65

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TCS - 1538/65
IB - 35/65
9 March 1965
Copy # 6

MEMORANDUM FOR: Chief, Forces Division, ORR
Chief, Naval Branch, OSI

ATTENTION : [REDACTED], Naval Systems Branch 25X1A
[REDACTED] Naval Branch

THROUGH : Chief, Requirements Branch, Reconnaissance Group, CGS

FROM : Chief, Photographic Intelligence Division, CIA

SUBJECT : Search of Selected Chicom Shipyards for Evidence of Sub-
marine Construction, Photo Study

REFERENCES : (a) ORR Requirement No. C-RR4-82,039
CIA/PID Project No. 30971-4
(b) NIS 39A, Supplement I, Section 2, "Communist
China - Principal Ports"
(c) IB/G-MB Memorandum No. IB 17/65, dated 21 January 1965
"G' Class Ballistic Missile Submarine Construction,
Lu-Ta Shipyard, Dairen, China; Photo Study
(d) US NAVPIC DPIR No. 638/60-S, "USSR 'Komar' Class PTMG,
Preliminary PI Analysis (c)"
(e) G-MB Memorandum No. 114/65, dated 18 February 1965,
"Chicom 'OSA' Class PTMG, Photo/Mensural Study"
(f) IB/G-MB Memorandum No. IB 446/64, dated 14 December 1964,
"Kiang-nan Shipyard Submarine Construction"
(g) IB/G-MB Memorandum No. IB 447/64, dated 15 December 1964,
(addendum to IB 446/64)

1. In response to Requirement No. C-RR4-82.039 (Project No. 30971-4), requesting a search of all available recent overhead photography of selected shipyards in Communist China for possible evidence of submarine construction, a study was made and the following salient observations noted:

a. The "G" Class ballistic missile submarine first sighted in the water alongside commercial pier # 4 (see reference b) at Dairen (Ta-Lien, China (38-55-44N/121-38-17E), on coverage dated [REDACTED] was, fact, probably constructed on the center building way of the Dairen (Ta-Lien) Shipyard.

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GROUP 1
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Shipyard. Construction of a "G" Class SSB appeared to have begun prior to [REDACTED]; the submarine was probably launched between [REDACTED]. Throughout its construction a large portion of the submarine hull was covered by a combination of vertical screening, weather/concealment sheds, and possible matting. As far as can be determined by detailed analysis (see reference c), this submarine is nearly identical, with respect to outer dimensions and configuration, to the "standard" Soviet "G" Class ballistic missile submarine. The "G" Class SSB was last sighted at Dairen on coverage dated [REDACTED] in the identical position as observed on [REDACTED].

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25X1C
25X1C

b. No evidence of the construction of a second "G" Class SSB was noted in a review of all coverages from [REDACTED] to the present of all major shipyards in Dairen, Shanghai, Wu-Chang, and Kuang-Chou (Canton), China. [REDACTED] coverage of Dairen probable vertical screen sections were again noted near the center building way of Lu-Ta Shipyard. These screens had previously been sighted only in connection with the construction of the "G" Class SSB on this building way; they were not present on photo coverage of Dairen dated [REDACTED].

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c. "W" Class submarine construction is continuing at the Kiang-nan Shipyard, Shanghai, China (31-11-53N/121-29-05E). [REDACTED] revealed one probable "W" Class SS on a building way and four probable "W" Class hull sections in the staging area at the head of the building ways. KEYHOLE coverage of [REDACTED] revealed one probable "W" Class SS on a building way and an unidentified 200 foot object on the adjacent building way; it is quite possible that this second unidentified object could equate to the assembled submarine hull sections previously sighted in the staging area.

d. [REDACTED] coverage of the Wu-Chang Shipyard, Wu-Chang, China (30-31-55N/114-17-00E), dated [REDACTED] revealed one probable "W" Class SS on a building way. The submarine was nearly completely covered, except for its sail, by weather/camouflage sheds. Another unidentified vessel under similar sheds on an adjacent building way was observed on this same [REDACTED] coverage. KEYHOLE coverage of [REDACTED] revealed one possible submarine (length-overall [LOA] - approximately 250 feet) along the inner side of the fitting-out barge and an unidentified object, approximately 260 feet LOA, on a different building way from those on which the probable "W" Class SS and the shed-covered unidentified vessel were observed on the [REDACTED] photography. Two possible submarines (LOA of each, approximately 260 feet) were identified at Wu-Chang on KEYHOLE photography of [REDACTED]. These two possible submarines were located on different building ways from those on which a probable "W" Class SS and an unidentified shed-covered vessel were seen in [REDACTED].

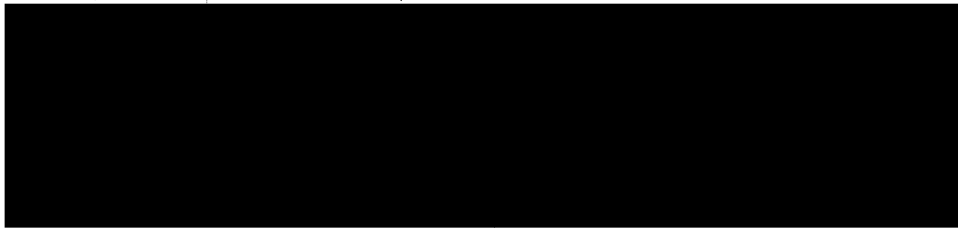
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25X1B



25X1D f. Of additional possible significance was the presence at International
25X1D Dockyard, Shanghai, China (31-15-15N/121-32-41E), on coverage dated [REDACTED]
25X1D [REDACTED] of a possibly modified, probable "P-6" hull (possibly about to be out-
fitted with an unidentified rectangular object approximately [REDACTED] feet in
length) and an unidentified vessel, LOA 125 feet, bearing a marked simi-
larity to the Chicom "Osa" Class PTFG (minus missile launchers). Reference
(d) states that the "Komar" Class PTG is outfitted with 21½ foot long missile
launcher covers. The unidentified 125 foot vessel at Shanghai was similar
in several respects (hull and bridge house configuration; vessel length-over-
all) to the Chicom "Osa" Class PTFG described in reference (e). Although
no missile launchers were seen on this boat, a large white area, or platform,
on the after part of the vessel appeared to equate favorably in length, 25X1D
although not with the exact positioning, of such launchers on the Chicom 25X1C
"Osa" Class PTFG.

25X1D 2. All usable best quality cloud-free coverage flown over each of these four
25X1C areas between [REDACTED] was utilized in the course of this study.
This included a combined total of ten (10) [REDACTED] and KEYHOLE missions over Dairen;
[REDACTED] missions over Kuang-Chou (Canton); [REDACTED] missions, plus a [REDACTED]
[REDACTED] over Shanghai; and eight (8) coverages over Wu-Chang. In every
instance of usable coverage of each of the major shipyards in these areas, inter-
pretation was accomplished by the employment of stereo photography when available.
A total of sixteen (16) yards and/or sites were examined in the course of this study.
More than 60 different instances of stereo coverage (over half of which were [REDACTED]
were employed; in several instances where conventional stereo was unavailable false
stereo was utilized. 25X1D 25X1C

25X1D 3. The cut-off date for all materials used in this report was [REDACTED]

4. A more detailed description of the activity at each of the major ship-
yards in the four areas of interest will be found in enclosure (1) to this memo-
randum. Enclosure (2) contains a complete listing of all film references and
documents utilized in the preparation of this study.

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25X1C

5. A detailed photo/mensural analysis (including line drawings for each instance of [REDACTED] coverage while under construction) of the "G" Class SSB under construction at the Lu-Ta Shipyard, Dairen, has been forwarded via reference (c). A preliminary photo analysis on submarine construction at Kiang-nan Shipyard, Shanghai, was forwarded via references (f) and (g).

6. Forwarded for your retention is a notebook (enclosure 3) containing seventy-six (76) annotated photo enlargements (CIA/PID/IB-P-1509/64 through P-1518/64 and CIA/PID/IB-P-1520/64 through P-1586/64), one (1) annotated photo mosaic (CIA/PID/IB-P-1498/64) three (3) annotated line diagrams (CIA/PID/IB-P-1495/64, P-1506/64, and P-1507/64), and two (2) locator charts (CIA/PID/IB-P-1505/64 and P-1508/64).

7. All measurements on this project, with the exception of the "G" Class SSB at Dairen, have been made by the CIA/PID project analysts. They should not be construed as being mensuration data compiled by the NPIC Technical Intelligence Division. All measurements pertaining to the "G" Class SSB have been made by the NPIC Technical Intelligence Division and are considered accurate to within plus [REDACTED] whichever is greater.

25X1D

25X1A

8. The photo analysis on this project was performed by [REDACTED] CIA/PID/IB, and [REDACTED] CIA/PID/GMB, who may be contacted on extensions 2546 and 2548 respectively. This project was produced jointly by the Industrial Branch and the Geo-Military Branch, Photographic Intelligence Division, CIA.

9. This memorandum with enclosures completes the referenced requirement.

25X1A

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Enclosures:

- 1 - Chronological Photographic Analysis of Shipyard Activity at the Major Shipyards of Dairen, Kuang-Chou, and Wu-Chang, China - [REDACTED] Shanghai, China - [REDACTED]
- 2 - References
- 3 - Chicom Submarine Construction

25X1D

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- 8 - Route
- 9 - IB Project
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- 12-13 - IB Branch Copy w/Enclosures
- 14 - NSA Liaison NPIC (Minicard)

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ENCLOSURE I

25X1D

CHRONOLOGICAL PHOTOGRAPHIC ANALYSIS OF SHIPYARD
ACTIVITY AT THE MAJOR SHIPYARDS OF DAIREN, KUANG-
CHOU, AND WU-CHANG, CHINA - [REDACTED]
[REDACTED] SHANGHAI, CHINA - [REDACTED]

25X1D

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1. In order to amplify the more significant items of intelligence interest noted in the basic memorandum, as well as to provide continuity and descriptive text for the enclosed book of photographs (enclosure 3), additional information on each shipyard studied has been arranged in the following format:

APPENDIX (I through IV) one appendix for each of the four shipyard complexes.

SHIPYARD NAME

COORDINATES

(Negative evidence of submarine construction or activity on all instances of coverage - to be included as appropriate)

COVERAGE #

MISSION #

DATE

PHOTO #

(Represents chronological order of those coverages utilized in the compilation of this study)

(Corresponding to annotated print in enclosure 3)

REMARKS

- a. Evidence of submarine activity or construction
- b. Evidence of possible camouflage activity (if noted - otherwise omitted)
- c. General description of vessels on building ways, graving docks, and/or fitting-out areas (to include Naval vessels by type and/or class if noted). Initial identification, where possible, of a specific naval class under construction at a specific yard shall be so noted in the text.
- d. Significant changes in facilities (if noted - otherwise omitted)
- e. Additional remarks as necessary

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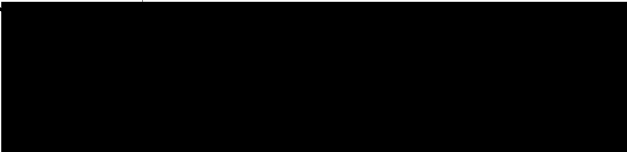
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All descriptive texts are arranged in chronological order from earliest to latest instance of coverage. Frame references pertaining to each mission may be found in enclosure (2) and also as an annotation to the applicable graphic in enclosure (3). Building way designations for Dairen (Lu-Ta), Kiang-nan, and Wu-Chang Shipyards are derived from the line drawings of these yards found in enclosure (3). These line drawings are to be used for locating and reference purposes only; they are not drawn to scale.

2. The following tabulation of abbreviations and terms found in this project (in both the text and in the accompanying graphics) is included in order to avoid any possible ambiguity concerning their usage. It is intended that the term definitions be utilized only within the context of this project.

<u>Abbreviation</u>	<u>Meaning</u>
APPROX	approximately
BLDG	building
	
DE	destroyer escort
EXP	exposure
FWD	forward (satellite camera)

25X1C

25X1C

KH	KEYHOLE satellite photography (average contact scale near nadir on KH-4 system is roughly 1:330,000)
LCM	landing craft mechanized
LOA	length-overall
LSM	medium landing ship

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Abbreviation

Meaning

LST	tank landing ship
MAX	maximum
MSC (O)	old coastal minesweeper
MSF	fleet minesweeper
NO.	number
ODD	old destroyer
PC	large submarine chaser
PF	patrol escort
PGM	motor gunboat
PROB	probable
PT	motor torpedo boat
PTF	fast patrol boat
PTFG	large guided missile patrol boat
PTG	small guided missile patrol boat
SS	submarine
SSB	ballistic missile submarine
U/C	under construction
U/I	unidentified
YP	patrol craft

Term

Meaning (within context of project)

foot (of way)

launching end of shipbuilding way. (In the case of Wu-Chang that end of the way nearest the transverser)

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Term

Meaning

head (of way)

that section of shipbuilding way furthest
from launching way. (furthest from
transverser at Wu-Chang)

way

shipbuilding way

Photo Numbers

Photo numbers referred to in the text of enclosure (1) to this memorandum are those CIA/PID graphic numbers found in the upper right corner of each of the annotated photo enlargements forwarded via enclosure (3).

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APPENDIX I

DAIREN (TA-LIEN) SHIPYARD COMPLEX

LU-TA SHIPYARD

38-55-44N/121-38-17E

25X1C

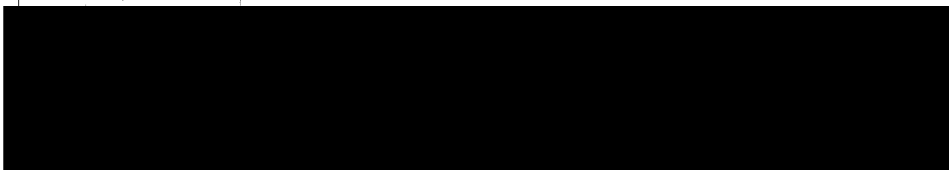


25X1D

a. A cylindrically-shaped object (subsequently evaluated as a section of possible submarine hull), approximately 15 feet across its apparent diameter, was partially visible in its initial stages of construction on building way #2. Narrow flat "platforms", each approximately [REDACTED] wide, were noted attached along each side of the cylindrical object. It could not be determined whether or not these "platforms" were, in fact, possible scaffolds. Visible length of the possible hull section was approximately [REDACTED] maximum possible LOA was approximately 70 feet.

25X1D

25X1B



c. Several large merchant vessels were observed in both graving docks, on building ways #1 and #3, and along the fitting-out mole. One U.S. "LST-1" Class LST and one possible "Kaibokan I" Class PF were noted in the inner harbor.

25X1C



a. A possible submarine hull, approximately 125 feet LOA, was observed protruding from beneath either end of a weather/concealment shed on building way #2. The maximum apparent beam visible at either end of the possible hull section was approximately [REDACTED]

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b. High vertical security screens were positioned around three sides of the possible submarine hull. Three large merchant vessels were nested together across the foot of building way #2.

c. One "Gordy" Class ODD was tied up outboard of the large mole. Graving dock #1 was occupied by one "Kronshtadt" Class PC and one possible "Kaiboken I" Class PF. One "IST-1" Class LST and three unidentified patrol craft were in the inner harbor. Several large merchant ships were located in the water and in the remaining building ways and graving dock #2.

d. Construction of a small peaked-roof building with a high rectangular "loft-like" structure adjoining one side was observed to have been nearly completed directly at the head of building way #2. This structure was only partially constructed on the preceeding coverage.

25X1C

a. A "G" Class ballistic missile submarine was noted in a relatively advanced stage of construction on building way #2. The submarine's extended bow planes and large vertical shear, possibly equating to the snorkel intake mast, were readily visible on this photography. Portions of scaffolding along each forward edge of the submarine were also observed.

25X1B

c. Three probable "Shanghai" Class PTF hulls and two probable "MK-6" Class LCM were observed under construction on building way #3. This was the first time either of these classes of naval vessel had been observed under construction at this yard. Seven probable "MK-6" Class LCM were noted in the water along the quay by the very large fabrication building. Two "Kronshtadt" Class PC were in the inner harbor. Building way #3 also contained two probable tugboats under construction. A large merchant ship was nearly completed on building way #1. Graving dock #2 contained one probable "Shanghai" Class PTF, one unidentified small craft, and one large merchant vessel; graving dock #1 contained a possible "Kaiboken I" Class PF and two unidentified small craft. Nine large and several smaller merchant vessels were observed in the inner harbor and along the large fitting-out mole.

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d. Construction of the small peaked-roof building (containing the high rectangular structure on one side) located directly at the head of way #2 appeared to have been completed.

25X1C

a. A "G" Class SSB was observed in an advanced stage of construction on building way #2. It was noted that the visible forward section of the sail was open toward the bow - as well as from above - indicating that the vessel was not yet ready for launching.

25X1D

25X1B

25X1B

b. The high vertical security screens noted along three sides of the submarine on the last prior coverage were still in place. A weather/concealment shed, (approximately [redacted] LOA) covered the amidships section of the submarine. [redacted]

c. Six probable "Shanghai" Class PTF hulls and 10 probable "MK-6" class LCM were observed under construction on way #3. Building way #1 was empty. Two "Kronshtadt" Class PC and one "Kaibokan 1" Class PF were observed in the inner harbor. Eleven large and several small merchant vessels were noted in the harbor area, along the mole, and in both graving docks.

25X1D

a. A probable "G" Class SSB was observed on building way #2.

25X1B

c. A probable "Gordy" Class ODD was located outboard of the large mole. Unidentified small craft were visible on building way #3; a possible small floating drydock was under construction on way #1. (No previous drydock construction was noted at this yard). A large merchant ship was visible in

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graving dock #2; graving dock #1 contained a smaller unidentified vessel. Seven large merchant ships and several smaller unidentified vessels were observed in the inner harbor and alongside the large mole.

25X1D

25X1C

e. For purposes of this study all prior KEYHOLE coverages (through KEYHOLE [REDACTED] were not utilized since much better quality, larger scale [REDACTED] photography was available during this [REDACTED]

a. A possible "G" Class SSB was observed on building way #2.

b. Shadow patterns suggested that the vertical security screens were still in position although the small scale of the photography precluded the identification of screens per se.

c. A probable "Gordy" Class ODD was observed alongside the large mole. Building way #3 was completely empty. At least two unidentified small vessels were under construction on way #1; the small floating dock previously constructed on this way was observed alongside the head of the large fitting-out mole. Activity within each graving dock could not be identified. Two large and two medium merchant ships were tied up along the outboard side of the fitting-out mole. No large merchant ships were visible within the inner harbor.

e. It should be noted that the marked decrease in merchant ship activity in and around the Lu-Ta yard appeared at this time to coincide with the beginning of an apparent emphasis on naval construction and repair (see coverages 8 and 9 - photos 1522 and 1524).

25X1D

a. A "G" Class SSB was observed in a possible launching cradle along the inner side of the fitting-out mole.

25X1D

25X1D

b. Building way #2 was completely empty (indicating that the "G" Class SSB built here was launched between [REDACTED] since the first sighting of a possible submarine hull on this way occurred in [REDACTED] total keel-to-launch construction time was probably a little over 27 months). Small unidentified vessels were observed under construction on building ways #1 and #3. An unidentified vessel occupied graving dock #1; graving dock #2

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ENCLOSURE I

was flooded and unoccupied. Two probable "Gordy" Class ODD were tied up along the outboard side of the fitting-out mole. One large merchant ship and one smaller unidentified vessel were berthed in the inner harbor. The small floating drydock previously sighted at Dairen was observed alongside commercial pier #4 opposite the shipyard. (See Fig 2-22 of reference b.)

25X1D

a. A completed "G" Class SSB was observed berthed alongside commercial pier #4 opposite the shipyard. A detailed photo/mensural analysis of this submarine revealed it to be nearly identical to the "standard" Soviet "G" Class with respect to outer dimensions and visible configuration. (See reference c.)

b. No camouflage activity was discernable in any part of the shipyard at this time.

c. Building way #2 (on which a "G" Class SSB was noted under construction on previous photo coverage) was observed to contain 3 probable PTF hulls, possibly "Shanghai" Class, and $3\frac{1}{2}$ possible tugboat/trawler hulls. Five possible small tug-boat/trawler hull sections were located in the staging areas just above the head of building way #2. Building way #1 contained one possible tugboat/trawler and one small barge. Numerous small pieces of construction materials - none of which could be identified as submarine-associated - were noted in the large staging area at the head of building way #1. Building way #3 contained $6\frac{1}{2}$ probable "Shanghai" Class PTF hulls in various stages of construction and one medium tugboat/trawler. Nine probable "Mk-6" Class LCM were noted just NE of building way #3. Both graving docks were flooded and unoccupied. Vessels in the water included three "Gordy" Class ODD, one "W" Class SS, one "Shanghai" Class PTF by the fitting-out mole, two probable and eight possible "Mk-6" Class LCM, and two large merchant ships.

25X1D

e. All completed PTF hulls evaluated as (probable) "Shanghai" Class were determined to be approximately [REDACTED]. The provisional drawing for this class found in reference (d) indicates a LOA of 120 feet. In view of the provisional nature of the information in ONI 32-8A, it was believed that these vessels were, more than likely, of the "Shanghai" Class since topside detail appeared identical to the above-deck configuration visible on this class on ground photography.

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ENCLOSURE I

25X1D a. A completed "G" Class SSB was again observed in the identical position alongside commercial pier #4 as was the "G" Class seen on the coverage dated [REDACTED]. No identifiable submarine construction was noted in the shipyard.

25X1C b. Five probable vertical screen sections, positioned variously at right angles to one another, were placed out in the open (apparently just for storage purposes) in the staging area at the head of building way #3. An additional two probable security screens were observed placed at right angles to a third probable vertical screen on the northernmost corner of the center building way (way #2). It was noted that these probable vertical screens appeared to correspond roughly in length, height, and general configuration to those previously sighted (especially those observed on [REDACTED]). In all instances of previous coverage of Dairen vertical security screening has been noted only in connection with assembly of the "G" Class submarine. The probable screens observed at the very head of way #2 in [REDACTED] would appear to effectively hide any ground/sea level view from the north toward the head of this way. On the [REDACTED] coverage it was noted that the northern sector was the only one from which the head of building way #2 could have been observed on the ground/water - since vision from all other sectors toward way #2 had been effectively blocked by buildings or vessels on the ways.

25X1D c. Building way #2 (where a "G" Class SSB was previously sighted under construction) contained five probable "Shanghai" Class PTF hulls and four small tugboat/trawler hulls under construction. Four probable tugboat/trawler hull sections were observed in the staging area at the head of building way #2. Two small merchant hulls were under construction on way #1. Five probable "Shanghai" Class PTF hulls and one medium tugboat/trawler were under construction on building way #3. One small merchant ship and one probable barge were observed in graving dock #1. Graving dock #2 was occupied by a large merchant vessel and two unidentified small craft. Vessels in the water included 3 "Gordy" Class ODD, one "W" Class SS, three "Shanghai" Class PTF, 21 probable "Mk-6" Class LCM, and one large merchant ship.

25X1D e. No evidence of the continuation of "Mk-6" Class LCM construction was evident at the Lu-Ta shipyard on this photography.

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ENCLOSURE I

APPENDIX II

KUANG CHOU (CANTON) SHIPYARD COMPLEX

HUANG-PU NAVAL BASE AND SHIPYARD

23-05-00N/113-24-45E

No evidence of submarine construction or submarine activity was observed in all instances of photo coverage of this shipyard/naval base from [REDACTED]

25X1D

25X1D

b. No evidence of any weather/concealment sheds or of any possible camouflage activity was observed on any of the building ways.

c. A small probable oiler was observed in a nearly completed state of construction on the westernmost building way. Numerous small unidentified merchant craft were observed on the remaining building ways. One medium and one small unidentified surface craft were noted in the graving dock. No identifiable naval vessels were observed at the operating base.

d. The roof of a large fabrication-type building under construction was nearly two-thirds completed within a large cleared area on the westernmost tip of Whampoa Island. Supports for a second large building were also observed within the large cleared area - as were large quantities of construction materials. A small steel plant was located east of the naval base; however, no raw materials or finished products were in evidence near this installation.

25X1C

b. A series of small weather sheds and/or camouflage huts (approximately 180 feet in length by 25 feet wide) were placed over the westernmost building way. The sheds were placed too closely together to determine the existence of vessel(s) beneath them. A small unidentified surface craft was visible protruding from beneath a small weather/concealment shed on the easternmost building way. Several weather/concealment hut sections were stored at the head of the building ways. It should be noted that no sheds have been identified covering any of the building ways on past [REDACTED] coverage.

25X1C

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ENCLOSURE I

c. Several small unidentified surface craft were observed on the center building ways of the shipyard. The graving dock contained a possible ship cradle under construction. Vessels in the water near the shipyard included one possible "T-43" Class MSF, one "Shanghai" Class PTF, and one unidentified canvas-covered patrol craft - approximately 130 feet LOA (it was noted that the after end of this vessel contained objects similar in shape to "Osa" Class PTFG launchers, but no identification or meaningful measurements could be made because of the canvas). Ships in the water by the graving dock included a probable "Castle" Class PF and one U.S. "IST-1" Class IST. Vessels along the quay by the possible small boat repair yard at the eastern end of the naval base included one probable "Kronshtadt" Class PC, a "Swatow" Class PGM, and 2 possible "Whampoa" Class YP. An additional "Swatow" was on a newly-constructed repair ramp.

d. The large fabrication building previously observed under construction on the western tip of Whampoa Island was observed to be nearly completed and to contain four bays. A large two-bay building has also been constructed within the large cleared area. Each of these buildings measure roughly 190 feet wide by 380 feet long. Large quantities of construction materials were noted between the two buildings. A possible small boat repair yard was under construction near the small steel plant at the eastern edge of the naval base.

25X1C e. Analysis of coverages #2 through #6 of the Huang-Pu Naval Base and Shipyard did not reveal any significant additional intelligence not already derived from the comparative analysis of coverages #1 and #7. Coverage #4 [REDACTED] did not reveal any evidence of naval combatant construction at the shipyard. Two possible small oilers and several smaller merchant craft were on the building ways. No naval combatants were berthed alongside the quayed areas of either the shipyard or the naval base; one probable PF was dead in the water in mid-stream. Remaining coverages were of poor quality due to obliquity, small scale, or weather.

NEW SHIPYARD UNDER CONSTRUCTION

23-06-10N/113-18-45E

This shipyard was still in early stages of construction. No naval combatant activity has thus far been observed at this site.

25X1C

e. Site of future shipyard under construction was observed on this and several subsequent coverages to contain farmland and probable agricultural storage buildings. Construction of shipyard began between [REDACTED]

25X1D

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ENCLOSURE I

25X1C

25X1C

[REDACTED] Analysis of coverage #6 of this site [REDACTED] revealed that earth-grading had begun although a launch channel had not yet been dug. No work had been started on the transverser way.

25X1C

[REDACTED]

d. A new shipyard, to contain approximately six building/repair ways on each side of the transverser table, was observed in a state of rapid construction. A transverser table foundation (approximately 510 feet LOA by 175 feet wide) and two building ways were nearly completed. Ground clearing for additional building ways and construction work on a submersible ship cradle similar to that at the Huang Pu Shipyard (Whampoa Island) were well under way. Site is primarily served by water-borne carrier; there is no rail connection; a small trail connects the site to the mainland. Transverser size limitations suggest that, should this yard produce naval craft, they would necessarily have to be in the minor combatant classes.

UNNAMED SHIPYARD

23-05-20N/113-27-45E

This small boatyard adjoins what was formerly a large boat basin. The basin has since been drained and converted to a large new probable graving dock under construction. No naval combatant activity has thus far been observed at this site.

25X1C

[REDACTED]

c. Approximately 12 small uncovered building/repair ways contained various barges, river craft, and other small boats. Numerous unidentified small craft were nested in the boat basin.

25X1C

e. Coverage in [REDACTED] revealed that construction of one-half of one of the two retaining walls of the cofferdam across the mouth of the boat basin had been started. Completion of the cofferdam was first noted in [REDACTED]. Placement of fill between the cofferdam forms had not been completed. The water level on the inward side of the cofferdam was at river level; no evidence of pumping operations was observed. As of [REDACTED] the cofferdam had been completed, and probable pumping operations had started. By [REDACTED] the basin floor had been pumped dry and possible construction materials appeared stacked on the floor toward the cofferdam; concrete forms had not yet been laid.

25X1C

25X1D

25X1D

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ENCLOSURE I

25X1C



25X1D

b. Small weather/concealment sheds, approximately 100 feet in length by 45 feet wide cover several of the building/repair ways. These sheds were first observed in [REDACTED]

c. An unidentified object, approximately 80 feet LOA, was observed on the southernmost exposed building way. No vessels were observed on any of the other exposed or covered ways. A medium freighter, a possible dredge, and several unidentified small craft were berthed at the "L-head" pier (the only pier serving the yard).

d. Extensive construction activity was observed at the site of the probable new graving dock. Forms for the dock floor were apparently in the process of being poured. Estimated bottom dimensions for dock when completed were approximately 120 feet wide by 490 long (taken to the inner side of the probable position of the caisson wall).

HO NAN TAO SHIP REPAIR YARD

23-06-14N/113-17-58

25X1D

No evidence of submarine construction or submarine activity was observed in all instances of photo coverage of this yard from [REDACTED]

25X1D

[REDACTED] Yard facilities are not large enough to handle out-of-water repairs to vessels over 235 feet LOA.

25X1C



c. Several unidentified small river craft were observed along three small pier areas and in the one small operational drydock. A second small graving dock appeared to be under construction just east of the first dock.

25X1C



c. Three of the four building/repair ways and both graving docks contained several small unidentified river craft. Two dredges, a floating derrick, several barges, and numerous medium and small river craft were moored in the immediate vicinity of the repair yard. Two large and two smaller river ferries were at anchor in the middle of the river.

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ENCLOSURE I

25X1D

d. Four building/repair ways, one graving dock, and several small shop buildings have been constructed at this yard since [REDACTED] Maximum LOA of the graving dock was approximately 235 feet; the maximum LOA of the largest building/repair way was approximately 150 feet.

TUNG LANG SHIPYARD

23-04-30N/113-14-47E

No evidence of submarine construction or submarine activity was observed in all instances of photo coverage of this yard from [REDACTED]

25X1D

25X1D

c. Several large and small merchant ships and river craft were observed on the building and repair ways, in the graving docks, and along breasting platforms protruding from the extensive quayage along the northeast edge of the yard.

25X1C

c. Graving docks and building and repair ways contained several small and medium merchant vessels. Numerous freighters, lighters, and small river craft were berthed along the extensive quayage.

d. Several shop and fabrication buildings have been newly constructed [REDACTED] back from the river.

25X1D

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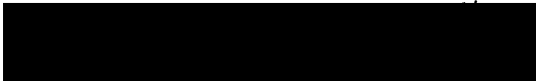
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APPENDIX III
SHANGHAI SHIPYARD COMPLEX

KIANG-NAN SHIPYARD
25X1C

31-1153N/121-29-05E

- 
- a. An unidentified vessel was visible, on very poor quality photography, on the number two submarine building way.
- b. Security screening was positioned across the end of the two building ways.
- c. A merchant ship, an unidentified vessel, and an unidentified surface vessel occupied the three graving docks. Three river boats (passenger) were berthed at the fitting-out wharf.

25X1C

- 
- a. Twelve probable "W" Class submarine hull sections were located at the foot of, between, and in the staging area above the submarine building ways. These probable hull sections appeared to be components for two submarines since two probable bow sections and two probable stern sections were evident. No submarines were undergoing assembly at this time.
- b. High vertical screening was observed to completely surround the submarine building area.
- c. Two probable "W" Class SS were undergoing extensive overhaul in graving dock #1. A merchant ship and three small craft occupied the #2 graving dock. Graving dock #3 contained one "W" Class SS and six small craft. Two additional "W" Class submarines were berthed at the fitting-out wharf.
- d. A very large fabrication building was completed during the interval of photo coverage .

25X1D

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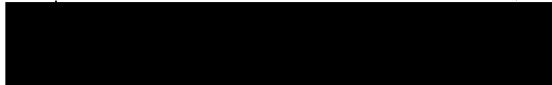
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25X1D



a. An unidentified object was observed on submarine building way #1. This poor quality, oblique photography with scattered clouds also revealed three unidentified objects in the hull section staging area above the ways.

b. Two areas of the object on the building way appeared to be covered.

25X1C

c. Two possible submarines, partially covered by sheds, were noted in the same positions in graving dock #1 as the two probable "W" Class SS previously observed on [REDACTED] Merchant ships occupied the number two and three graving docks, and two possible "W" Class submarines were berthed at the fitting-out wharf.

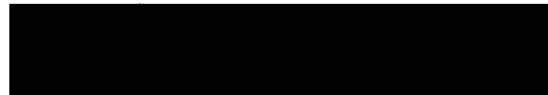
25X1D



a. Two unidentified objects, one 210 feet LOA and the other 90 feet LOA, occupied the #1 and #2 submarine building ways respectively.

c. Two narrow unidentified objects were noted in graving dock #1 in the same positions as the previously mentioned submarines. A possible barge-like object and a large merchant ship occupied the remaining two graving docks. No vessels could be identified at the fitting-out wharf.

25X1D



a. Clutter which could not be identified obscured the rails of the number two building way. The other way was completely empty. No hull sections were visible in the yard.

b. Security screening was visible at the foot of both submarine building ways.

c. Graving dock number one contained several sheds and unidentifiable objects. The contention that this imagery may represent possible midget submarine hull sections (see NAVPIC 1227 63 905) could not be confirmed from this poor quality, monoscopic photography. An unidentified rectan-

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gularly-shaped, object was observed in the flooded number two graving dock. A merchant ship occupied graving dock #3. One possible "W" Class submarine was tied-up at the fitting-out wharf.

25X1D

a. Submarine building way number two was occupied by an unidentified object approximately 250 feet LOA. Four unidentified objects were noted in the hull section staging area. The number one submarine building way was empty.

c. A possible submarine, unidentifiable by class, was observed in the number one graving dock. Two additional possible submarines were berthed at the fitting-out wharf. A large merchant ship occupied each of the two remaining graving docks.

25X1D

a. A "W" Class submarine, in an advanced stage of construction, was noted on the number two submarine building way. The number one way remained empty. Four probable "W" Class hull sections were observed in the hull section staging area. The total length of these four sections was approximately 225 feet. These sections probably represented the four major sub-assemblies of the submarine - indicating the employment of the "end-loading" technique of assembly.

b. High vertical security screening completely surrounded the submarine assembly area. A small shed, or nearly square-shaped covering, obscured the bow portion of the "W" Class SS on the number two building way.

c. Five additional submarines were observed in the yard. One "W" Class in the number one graving dock, two possible "W" Class at the fitting-out wharf, and two possible "S-1" Class also at the fitting-out wharf. Five merchant vessels were noted: one berthed across the end of the graving docks, one in the number two graving dock, two in the number three dock, and the fifth tied up at the fitting-out wharf.

e. The "W" Class submarine and the probable "W" Class submarine hull sections noted on this coverage corresponded in size and in position to the unidentified objects observed in the submarine assembly area on the previous photo coverage

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25X1D

a. A probable "W" Class submarine was situated on the number two submarine building way. The number one way was occupied by an unidentified object approximately 200 feet LOA. Another unidentified object, approximately 50 feet LOA, was observed in the hull section staging area above the ways.

25X1D

b. A white object on the bow of the probable "W" Class SS equated in size and position to the small shed or nearly square-shaped covering noted on the previous coverage [REDACTED].

c. Graving docks one and two were flooded. A possible merchant ship was in the number three graving dock with an unidentified small craft. A second possible merchant ship was berthed across the end of the number three graving dock.

25X1D

25X1D

e. Since submarine building way #1 was unoccupied on the previous coverage and since it further appeared that at least three of the four probable "W" Class hull sections previously observed in [REDACTED] in the hull section staging area were no longer present-it appeared logical that the 200 foot unidentified object seen on this [REDACTED] coverage may have in fact, represented a possible "W" Class submarine in the initial stages of assembly. It must be emphasized, however, that the quality of the KH-4 imagery as visible on this coverage, did not, by itself, yield enough detailed information to support the identification of the unidentified object seen on the number one building way as a possible submarine.

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APPENDIX III

SHANGHAI SHIPYARD COMPLEX

HU-TUNG SHIPYARD

31-16-05N/121-33-48E

No evidence of submarine construction or activity was apparent in all instances of photo coverage of this shipyard from [REDACTED] 25X1D.

25X1D

b. A Separately secured area, occupying approximately half of three of the building ways, was observed. This area contained four small buildings and several probable weather sheds situated over the building ways.

c. All five of the building ways were occupied by non-naval vessels (one merchant ship and numerous small craft). A small merchant vessel and a large river boat (passenger) were berthed at the north fitting-out wharf. A U.S. "LST-1" Class LST, four merchant ships, an unidentified naval vessel, a river boat (passenger) and numerous miscellaneous small craft were tied up at the south fitting-out wharf.

25X1D

b. Vertical security screening has been erected around the small basin formed by the north fitting-out wharf and the shore. The positioning of this screening was such as to permit little or no surveillance from either land or water. In the separately secured area of the building ways two possible "P-6" Class PT hulls were noted. One was in the open and the other was partially covered by a shed-like structure. Probable weather sheds were observed throughout this area.

c. The remaining building ways were observed to contain several barges, a merchant ship and a possible dredge. At the north fitting-out area were four small barges and a fitting-out barge. Two probable "P-4" Class PT boats were berthed in the screened-off basin of the north fitting-out area. At the south fitting-out wharf a "Riga" Class DE, a probable "Kaiboken II" Class PF, a merchant ship, two river boats (passenger), and numerous small craft were noted.

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APPENDIX III

SHANGHAI SHIPYARD COMPLEX

INTERNATIONAL DOCKYARD

31-15-15N/121-32-41E

No evidence of submarine construction was observed on all instances of photo coverage. A "W" Class submarine, however, was observed berthed at the fitting-out wharf on coverage #1 only.

25X1D

c. Four probable "Shanghai" Class PTF were under construction on two of the six buildingways. Three merchant ships and three unidentified small craft were under construction or repair on the remaining ways. A "Riga" Class DE occupied the graving dock. At the fitting-out wharf were berthed a probable "Shanghai" Class PTF, three probable "Swatow" Class PGM, the previously mentioned "W" Class SS, a probable oiler, a fitting-out barge and numerous miscellaneous small craft.

25X1D

25X1D

25X1D

25X1D

25X1D

25X1D

25X1D

c. A probable "P-6" Class PT hull, apparently without forward or after gun mounts, was located on the third building way from the launching basin. This boat appeared to be wider at the stern than the standard P-6. An unidentified object, approximately [REDACTED] LOA was placed on a platform situated immediately astern of the probable "P-6" Class PT hull. It should be noted that the "Komar" Class PTG incorporates a pair of [REDACTED] launch tubes on a "P-6" hull. On the second building way (from the launching basin) an unidentified vessel was observed. This vessel measured approximately 125 feet LOA. In general hull configuration, location and configuration of the deckhouse, and location of what appeared to be the possible forward gun-mount, this vessel closely resembled the "OSA" Class PTFG. A long, white, flat, canvas covering, or platform, was observed to nearly cover the after end of the boat. This white object was approximately 55 feet in length and ended approximately 5 feet from the stern. It should be noted that a photo/mensural study previously made of the Chicom "OSA" Class PTFG (see reference e) has revealed that the LOA for each missile launcher cover was [REDACTED] with a space between launchers of 6 feet - or a LOA of [REDACTED] for the total missile launcher section). The distance from the after edge of the aftermost launcher to the stern was [REDACTED]. The LOA of the Chicom "OSA" was determined to be [REDACTED] for the Soviet "OSA" described in

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25X1C

25X1D

DIA PC-230/2-1. Given accuracy tolerances of [REDACTED] for all of the above measurements on [REDACTED] photography, it is of possible significance that the LOA and the rough positioning from the stern of the unidentified white area, or platform, equate favorably with the dimensions obtained on the missile launcher section of the Chicom "OSA" Class.

Two merchant ships, a large unidentified vessel, a barge and three unidentified small craft occupied the remaining building ways. A possible "Kronstadt" Class PC, a merchant ship and a barge were observed in the graving dock. A probable "P-6" Class PT was berthed at a small wharf in the launching basin. Observed at the fitting-out wharf were a "Riga" Class DE, a "Kaiboken II" Class FF, a possible "Castle" Class FF, two U.S. "LST-1" Class LST, a probable oiler, four merchant ships and three barges.

SHANGHAI DOCKYARD

31-15-05N/121-31-50E

No evidence of submarine construction or activity was observed on all coverages of this shipyard.

25X1D

c. Three merchant vessels were noted, one in the large graving dock and two at the fitting-out quay. Two river boats (passenger) were also berthed at the fitting-out quay. A third similar river boat occupied the smaller graving dock.

25X1D

c. A merchant ship and a large river boat (merchant/passenger) were tied-up at the fitting-out wharf. A merchant vessel occupied the small graving dock. The larger dock, being under repair, was empty.

CHUNG HUA SHIPYARD

31-16-55N/121-33-28E

No evidence of submarine construction was observed on all coverages of this shipyard.

25X1D

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c. Five small river craft were under construction on the ways. Two barges a floating crane and 13 river craft were observed at the fitting-out wharf.

25X1D

c. Three probable barges were under construction on the ways. Numerous small barges and river craft were observed at the fitting-out wharf.

P'U TUNG SHIPYARD

31-14-47N/121-30-00E

No evidence of submarine construction or activity was observed on all coverages of this shipyard.

25X1D

c. Three barges and two probable tugboats occupied all five of this small shipyards building ways. A large merchant vessel was berthed at the fitting-out wharf.

25X1D

c. A large unidentified hull, possibly a river vessel, was under construction on the largest way. Except for two probable tugboats and a small boat the remaining ways were utilized for the construction of a pontoon wharf. Two merchant ships were observed berthed at the fitting-out wharf. A second newly constructed pontoon wharf was tied, end to end, to the existing fitting-out wharf.

CH'IU-HSIN (KIOUSIN) SHIPYARD

31-12-20N/121-29-50E

No evidence of submarine construction or activity was observed on all coverages of this shipyard.

25X1D

c. A small barge and a possible patrol craft were noted on the building ways. A small merchant ship occupied the graving dock. In the fitting-out

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area were berthed two probable "Kronshadt" Class PC, a possible "136 FT" Class MSC (0), seven possible patrol craft, two barges and a possible merchant ship.

d. Pilings for a new quay were being set just north of the graving dock.

25X1D

c. Two possible patrol craft and two probable barges were noted on the ways. A possible "Kronstadt" Class PC occupied the graving dock. Eight possible patrol craft (approximately 110 ft. LOA) and two possible patrol craft (approximately 135 ft. LOA) occupied almost all of the available berthing spaces in the fitting-out areas.

d. The quay under construction on the previous coverage appeared to be complete.

TUNG-CHIA-TU DOCKYARD

31-12-28N/121-30-12E

No evidence of submarine construction or activity was observed on all coverages of this shipyard.

25X1D

c. A large merchant ship was seen in the graving dock. An additional merchant vessel was berthed at the quay.

25X1D

c. Two river boats occupied the graving dock and three merchant ships were tied-up at the quays.

PING-AN DOCKYARD

31-11-59N/121-29-58E

No evidence of submarine construction or activity was observed on all coverages of this yard.

25X1D

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c. Four barges were noted on the ways. Four small merchant vessels and two possible patrol craft were berthed at the off-shore wharfs.

25X1D

d. The building ways contain three river boats and a barge. Three small merchant vessels and five barges were observed at the off-shore wharfs.

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ENCLOSURE I

APPENDIX IV

WU-CHANG (WU-HAN) SHIPYARD COMPLEX

WU-CHANG SHIPYARD

30-31-55N/114-17-00E

25X1D

25X1D

25X1D

a. One "W" Class SS was berthed along the inboard side of the fitting-out barge at the foot of the launching way. Nine possible submarine hull sections, having maximum visible diameters ranging from approximately 15 feet to [REDACTED] were located on or by four different building ways within the yard. A possible hull section was visible resting horizontally between the last two weather sheds on building way #1; two additional possible hull sections, each measuring approximately [REDACTED] 25 feet in length, were observed lying out in the open (horizontally) along side building way #1 (each section had a slight conical taper and appeared to be "slotted" at one end). A very small portion of a possible submarine hull section was observed to protrude from beneath the last weather shed on building way #2. Four possible cylindrically-shaped submarine hull sections were seen, standing vertically on end, at the head of building way #7 (portions of possible ballast tankage were seen along the inner edge of one of the sections); an additional possible submarine hull section was seen alongside the foot of way #9.

b. Four slightly dispersed weather/concealment sheds were located over the head of way #1; three more widely dispersed sheds were over the head of way #2. Vertical security fencing surrounded the activity on ways #1 and #2.

c. Surface vessels on the ways included on probable U.S. "LSM-1" Class LSM, 2 possible "Kronshtadt" Class PC, one unidentified possible minesweeper (LOA approximately 210 feet) - and a hull section of apparently the same class, and several small surface craft. Several unidentified small craft were in the water alongside the fitting-out barges.

d. Building supports were in place for a structure to cover way #5.

e. Width of transverser measured approximately [REDACTED] 25X1D

25X1D

TOP SECRET ROY
NO FOREIGN DISSEM

HANDLE VIA
TALENT-KEYHOLE
CONTROL SYSTEM ONLY

HANDLE VIA
TALENT-KEYHOLE
CONTROL SYSTEM ONLY

TOP SECRET RUFF
NO FOREIGN DISSEM

- 1538/65
#32
ENCLOSURE I

25X1D

a. One "W" Class SS was berthed in the identical position along the inner side of the fitting-out barge at the foot of the launchway as was the "W" Class SS seen in [REDACTED].

25X1D

b. The weather/concealment sheds, noted previously to have been dispersed on [REDACTED] coverage were observed on this later coverage to have been pushed together toward the head of building ways #1 and #2. No objects were visible beneath the sheds.

25X1D

c. The two possible "Kronshtadt" Class PC, one probable U.S. "LSM-1" Class LSM, and two possible unidentified minesweeper class under construction were all observed to occupy the same positions on the same ways as they had in [REDACTED]. Several unidentified small craft were on the ways and in the water.

d. Construction was observed to continue on the framework for a probable new covered building way.

e. Poor quality of the photography precluded detailed interpretation of many of the smaller objects in the shipyard.

25X1D

a. The sail of a probable "W" Class SS was observed between weather/concealment sheds placed over the submarine on way #1; a similar-looking row of weather/concealment sheds was placed over an unidentified vessel on way #2. The bow and stern of both vessels were hidden by the sheds, precluding an LOA for either vessel. The overall length of the sheds over each way did not exceed approximately 270 feet. No submarines were observed at the fitting-out area. Two unidentified circular objects were noted in the area immediately behind building ways number 1 and 2.

25X1D

b. As noted above the probable "W" Class SS and an unidentified vessel, on ways 1 and 2 respectively, were each covered by a series of small weather/concealment sheds. Further toward the head of each of these two ways were two additional rows of larger weather/concealment sheds (similar to those first seen in [REDACTED] /see photo 1576/, from which two possibly cylindrical objects protruded).

c. Vessels on the building ways included: 3 possible T-43 MSF under construction on way #3; 2 small possible lighters on way #7; and several unidentified small craft on several of the ways east of the transverser. Several small and medium unidentified surface vessels, barges, and cranes were located near the fitting-out barges.

TOP SECRET RUFF
NO FOREIGN DISSEM

HANDLE VIA
TALENT-KEYHOLE
CONTROL SYSTEM ONLY

HANDLE VIA
TALENT-KEYHOLE
CONTROL SYSTEM ONLY.

TOP SECRET RUFF
NO FOREIGN DISSEM

TCS - 1538/65
Page 33
ENCLOSURE I

d. Building way #5 was nearly completely covered by a recently completed building approximately 510 feet long by 100 feet wide.

e. The following facts should be noted with respect to an assessment of possible submarine construction (as opposed to repair) activity at the Wu-Chang Shipyard during the period [REDACTED]

(1) In both [REDACTED] coverages portions of, or all of, building ways #1 and #2 were sealed off by vertical screening. Security screening was noted in connection with submarine construction at both Kiangnan (Shanghai) and Lu-Ta (Dairen) shipyards. (See [REDACTED])

(2) The possible "slotted" submarine hull sections lying out in the open (horizontally) alongside way #1 at Wu-Chang in [REDACTED] bear a visual resemblance to the two horizontally-stowed, tapered (minus slots) probable "W" Class hull sections seen at the extreme head of Kiangnan building way #1 - also in [REDACTED].

(3) The possible ballast tankage seen on one side of an upright probable "W" Class hull section located at the foot of the platen area between Kiangnan ways 1 and 2 in [REDACTED] was also partially visible [REDACTED] on one of the four possible submarine hull sections stowed upright at the head of Wu-Chang building way #7. [REDACTED]

(4) No evidence of submarine hull sections, either stowed or under construction, was visible on poor quality [REDACTED] photography of Wu-Chang in [REDACTED]. It was noted, however, that the previously dispersed weather/concealment sheds had been pushed together toward the head of building ways 1 and 2. [REDACTED]

(5) If submarine construction/assembly were to be assumed at Wu-Chang during this time period [REDACTED], the methods used did not appear to equate to those later demonstrated at Kiangnan wherein large 50-60 foot completed sub-assemblies were pre-assembled (probably indoors) prior to final assembly on the outdoor building ways. [REDACTED]. Possible assembly at Wu-Chang apparently employed a technique whereby hull sections were assembled after the components were moved out of the fabrication building onto the building ways. Initial assembly at Wu-Chang appeared to have begun at the head of the ways as opposed to Lu-Ta where initial assembly began in the center of the way. (See photos [REDACTED]). It should be noted that the Wu-Chang ways appear level; both Kiangnan and Lu-Ta have inclined ways.

HANDLE VIA
TALENT-KEYHOLE
CONTROL SYSTEM ONLY

TOP SECRET RUFF
NO FOREIGN DISSEM

HANDLE VIA
TALENT-KEYHOLE
CONTROL SYSTEM ONLY

TOP SECRET RUFF
NO FOREIGN DISSEM

TCS 1538/65
Page 34
ENCLOSURE I

25X1D

(6) Of the 4 different types of naval surface combatants observed on the building ways at Wu-Chang during this period (2 possible "Kronshtadt" Class PC, 3 possible "T-43" Class MSF, 2 unidentified ships - possibly MSF's under construction, and one probable U.S. "ISM-1" Class LSM) - all, with the possible exception of the LSM, appear to have been under construction at this yard - indicating, at the very least, a decided de-emphasis at this time on repair work. (See photos [REDACTED])

25X1D

(7) A probable "W" Class SS and an unidentified vessel, both covered either partially or completely by portable weather/concealment sheds, were located on building ways 1 and 2 at the Wu-Chang Shipyard in June 63. These were the same two building ways where possible submarine hull sections were observed protruding from beneath weather sheds [REDACTED]

25X1D

a. A possible SS (LOA approximately 250 feet) was observed on building way #1 (where a probable "W" Class SS had been previously sighted on [REDACTED] photography). An unidentified object, possibly covered by a series of weather/concealment sheds, was located on building way #4. LOA of this second object was approximately 260 feet.

25X1D

b. The large weather/concealment sheds previously noted at the head of ways 1 and 2 in [REDACTED] were still present. It was noted that the positioning of each file of sheds differed from that previously noted - indicating perhaps that they were possibly covering some construction activity rather than their just being stored on the ways. The small scale and less than optimum film quality precluded any evaluation of possible objects seen in the open areas between sheds on ways 1 and 2. Possible security fencing had been extended to include all the open ways (1 through 4) west of the transverser.

25X1D

c. Three possible "T-43" Class MSF were observed on building way #3 in the same position where they had previously been sighted under construction in [REDACTED]. Small scale and poor quality photography precluded a description of other possible vessels in the yard or at the fitting-out areas.

TOP SECRET RUFF
NO FOREIGN DISSEM

HANDLE VIA
TALENT-KEYHOLE
CONTROL SYSTEM ONLY

HANDLE VIA
Talent-Keyhole
CONTROL SYSTEM ONLY

TOP SECRET RUFF
NO FOREIGN DISSEM

TCS 1538/65
Page 35
ENCLOSURE I

25X1D



25X1D

25X1D

a. A possible SS (LOA approximately 250 feet) was berthed along the inner side of the fitting-out barge at the foot of the launching way. (This is the same location where a "W" Class SS had earlier been observed out-fitting - see photos [REDACTED]). An unidentified object (LOA approximately 260 feet) was observed in the same position on way #4 as a similar object seen in [REDACTED].

b. Weather/concealment sheds were seen at the head of ways 1 and 2 in yet a different arrangement than had previously been observed. Cloud shadows obscured the upper half of ways 1 and 2; the foot of each way appeared to have unidentifiable clutter (possibly small craft) near the transverser.

c. An unidentified probable surface vessel was located at the foot of way #3. An unidentified surface vessel (LOA approximately 210 feet) was located along the outboard side of the fitting-out barge.

25X1D



25X1D

a. No submarine activity or construction was discernable on very poor quality photography of the shipyard. The 260 foot (approximate LOA) object previously sighted on way #4 was in the same position. [REDACTED]

e. Poor quality photography precluded any detailed analysis of possible vessels or of objects within the shipyard.

25X1D



25X1D

25X1D

a. A possible SS (LOA approximately 260 feet) was located on way #4 in the identical position where an unidentified object of the same size had previously been noted in [REDACTED]. A second object (LOA approximately 260 feet), previously seen only as very indistinct imagery on the prior two coverages of Wu-Chang, has been evaluated as a possible submarine on way #3 on this coverage. (A tapered hull and a possible sail were visible

TOP SECRET RUFF
NO FOREIGN DISSEM

HANDLE VIA
Talent-Keyhole
CONTROL SYSTEM ONLY

TOP SECRET RUFF
NO FOREIGN DISSEM

TCS - 1538/65
Page 36
ENCLOSURE I

in stereo through intermittent cloud shadows. Weather/concealment sheds were apparently positioned over the bow and stern sections of the possible submarine.)

b. Weather/concealment sheds were still located at the head of building ways 1 and 2. Unidentifiable imagery was observed in front of each row of sheds on each of these two building ways. The foot of way #1 appeared empty; several small unidentified objects appeared to be placed at the foot of way #2.

c. Five surface vessels (LOA roughly 200 to 230 feet) were located on ways 6-10; a smaller craft was also seen on way #6. An unidentified surface vessel (LOA approximately 210 feet) was berthed alongside the fitting-out barge.

25X1D

a. Two unidentified objects, each measuring approximately 260 feet in length, were observed on ways 3 and 4 in the identical position as the two possible submarines previously sighted in [REDACTED]

25X1D

25X1D

25X1D

25X1D

The objects seen on this [REDACTED] coverage, of less than optimum quality, appeared to have interrupted imagery - similar to the effect one would expect from a row of small slightly staggered weather sheds. (See [REDACTED])

b. Large weather/concealment sheds were again seen at the head of building ways 1 and 2. Unidentifiable imagery was observed toward the foot of each of these ways.

c. Several unidentified vessels were observed on the eastern ways. No vessels in the water by the fitting out areas could be identified.

TOP SECRET RUFF
NO FOREIGN DISSEM

HANDLE VIA
TALENT-KEYHOLE
CONTROL SYSTEM ONLY

Next 1 Page(s) In Document Exempt

HANDLE VIA
TALANT-KEYHOLE
CONTROL SYSTEM ONLY

TOP SECRET RUFF
NO FOREIGN DISSEM

TOP - 1538/65
Page 39
ENCLOSURE II

I. Photography Cont.

25X1D

II. Maps and Charts:

MAP REFERENCE	DATE	CLASSIFICATION
USATC 0381-05 HL	August 1963	SECRET NO FOREIGN DISSEM
USATC 0381-10 HL	August 1963	SECRET NO FOREIGN DISSEM
USATC 0614-06 HL	February 1963	SECRET NO FOREIGN DISSEM
SO614-06/2 MA (Mosaic)	September 1960	SECRET NO FOREIGN DISSEM
USATC 0492-02 HL	August 1964	SECRET NO FOREIGN DISSEM
USATC 0492-07 HL	December 1962	SECRET NO FOREIGN DISSEM
USATC 0493-06 HL	March 1963	SECRET NO FOREIGN DISSEM

III. Documents:

NIS 39A, Supplement I, Section II (S)
PC 230/2-1, "Naval Ships of USSR" (SNFD)
ONI 32-8A, "Naval Ships of Sino Soviet Bloc Less USSR" (SNFD)
IB-446/64, "Kiang-nan Shipyard Submarine Construction" (TSR-NFD)
IB-447/64 (Addendum to IB-446/64) (TSR-NFD)
IB-17/65, "G" Class Submarine Construction" (SNFD)
USNPIC 646/61-S, "USSR 'G' Class SSB - Photo Analysis" (S)
GMB-114/65, "Chicom 'Osa' Class PTFG - Photo/Mensural Study" (SNFD)
US NAVPIC DPIP No. 638/60-S, "USSR 'Komar' Class PTMG, Preliminary PI
Analysis" (C)
US NAVPIC 1227-63-905 "Possible Midget Submarines" (SNFD)

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NO FOREIGN DISSEM

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TALENT-KEYHOLE
CONTROL SYSTEM ONLY

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NO FOREIGN DISSEM

100 - 1538/65
Page 40
ENCLOSURE II

IV. Cables:

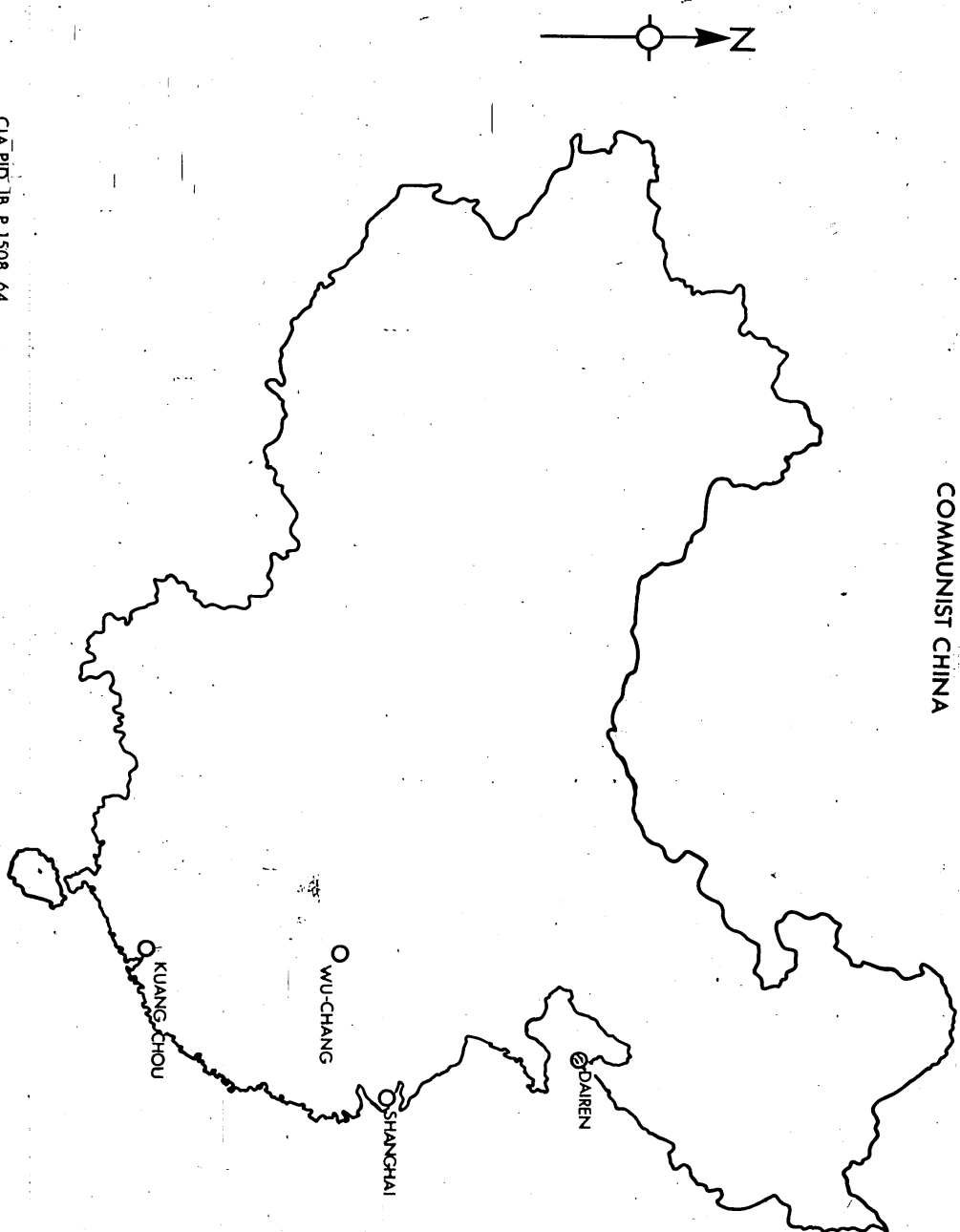
CITE CIA-P-020	22 Nov 1964 (TSR/NFD)
CITE CIA-P-021	28 Nov 1964 (SNFD)
CITE CIA-P-027	17 Dec 1964 (TSR/NFD)

TOP SECRET RUFF
NO FOREIGN DISSEM

HANDLE VIA
TALENT-KEYHOLE
CONTROL SYSTEM ONLY

SECRET

MAJOR SHIPBUILDING AREAS
COMMUNIST CHINA



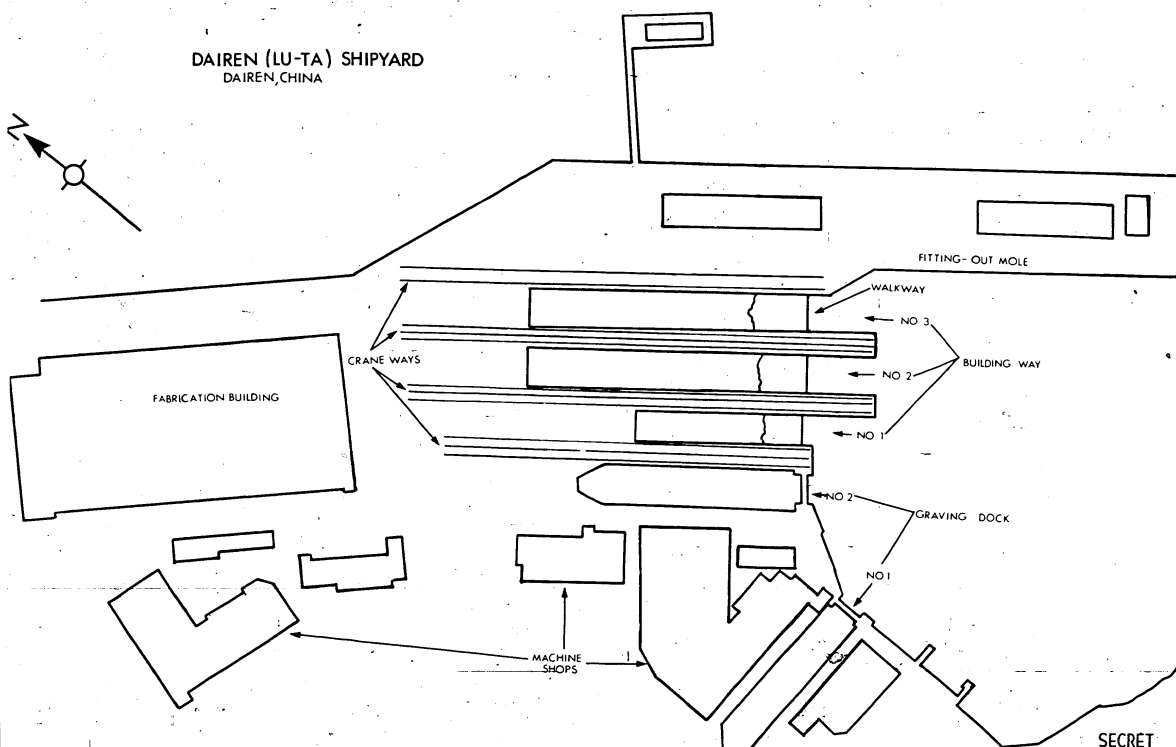
CIA PID 1B P 1508 64

SECRET

DAIREN (PA-LIEN)

SECRET
NO FOREIGN DISSEM

DAIREN (LU-TA) SHIPYARD
DAIREN, CHINA



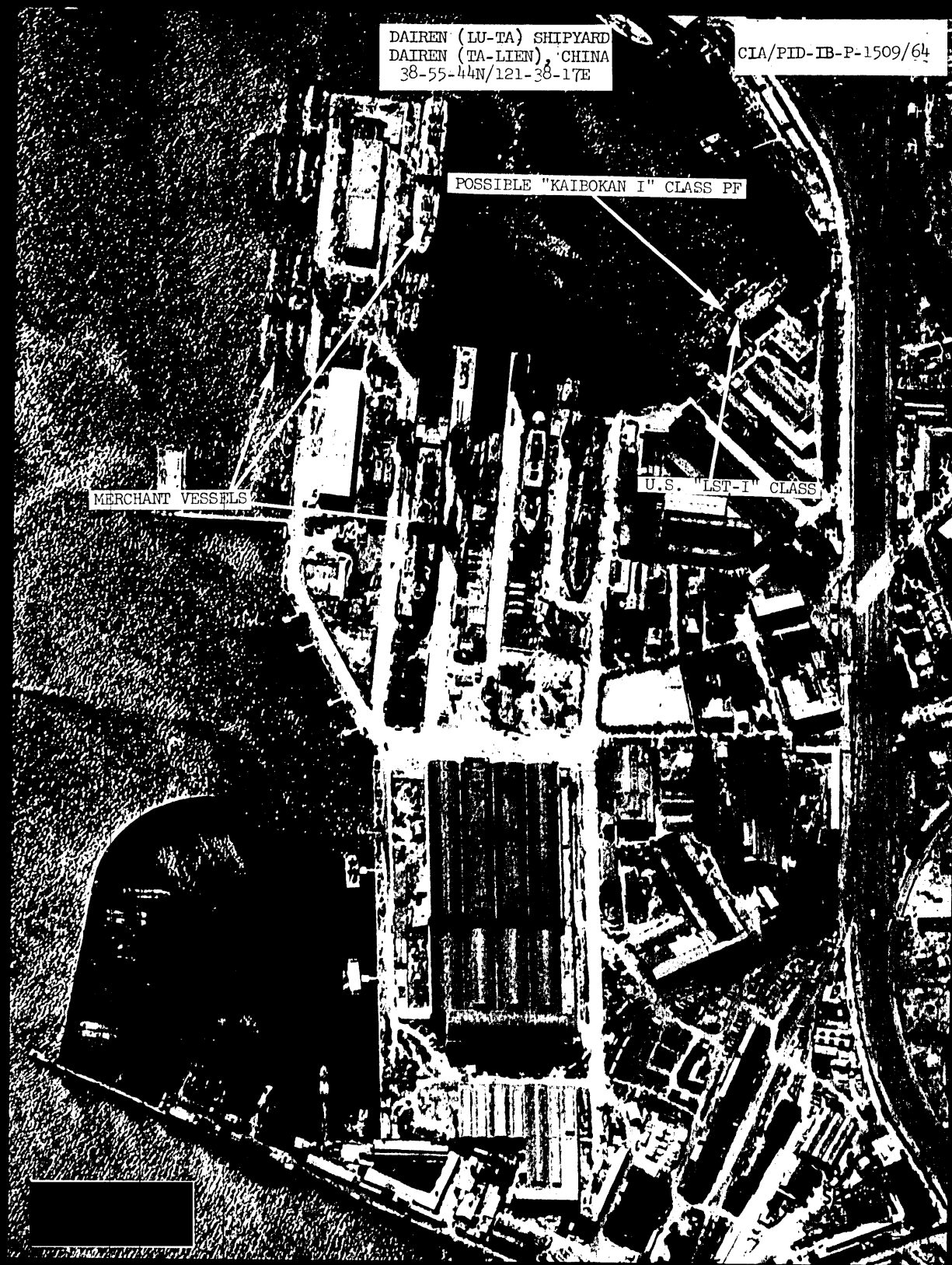
DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

CIA/PID-IB-P-1509/64

POSSIBLE "KAIBOKAN I" CLASS PF

MERCHANT VESSELS

U.S. "LST-I" CLASS



SECRET

NO FOREIGN DISSEM

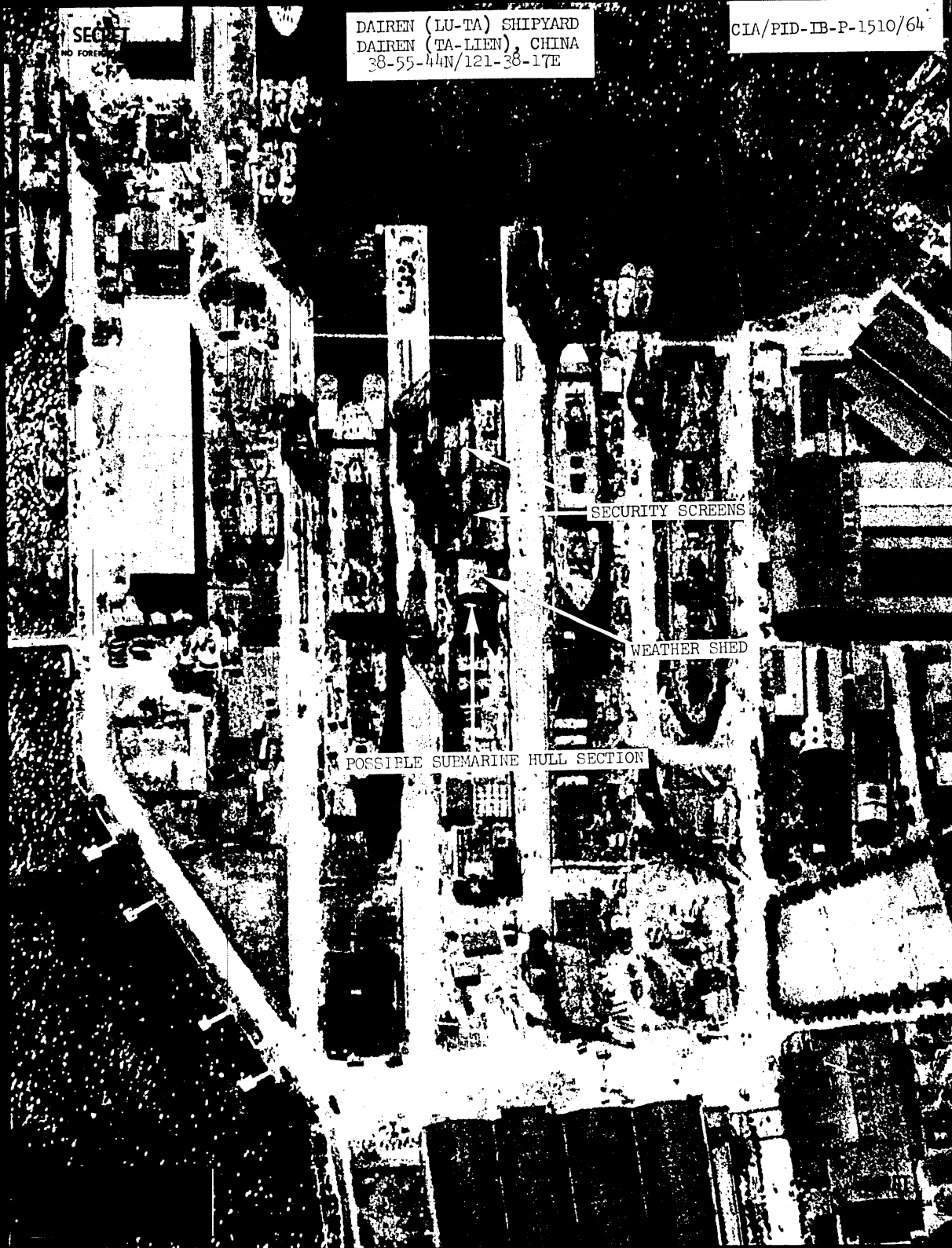
DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

CIA/PID-IB-P-1510/64

SECURITY SCREENS

WEATHER SHED

POSSIBLE SUBMARINE HULL SECTION



DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

CIA/PID-IB-P-1511/64

"GORDY" CLASS ODD

MERCHANT SHIPS

MERCHANT SHIPS



SECRET
NO FOREIGN DISSEM

DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
88-55-44N/121-38-17E

CIA/PID-IB-P-1512/64

SECURITY SCREENS

WEATHER SHED

POSSIBLE SUBMARINE HULL SECTION



DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

CIA/PID-IB-P-1513/64

MERCHANT SHIPS

MERCHANT SHIPS

2 "KROSHITADT" CLASS PC

2 PROBABLE "SHANGHAI" CLASS PTF
TULS U/C

"G" CLASS SSP

2 PROBABLE "TER-5" CLASS LCM U/C

1 PROBABLE "TER-5" CLASS LCM

SECRET
NO FOREIGN DISSEM

SECRET
NO FOREIGN DISSEM

DAIREN (14-7A) SHIPYARD
DAIREN (14-13E), CHINA
3-25-14/15-1-18/17E

CIA/PID-IB-1-15-14/64

SECURITY CONCRETE

POSSIBLE MATTING

WEATHER SHIELD

POSSIBLE SNORKEL
INTAKE MAST

POW PLACES

PROBABLE SCAFFOLDING

SECRET
NO FOREIGN DISSEM

SECRET

NO FOREIGN DISSEM

DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

CIA/PID-IB-P-1516/64

MERCHANT SHIPS

MERCHANT SHIPS

2 "KRONSTADT" CLASS PC

"KAIBOKAN I" CLASS PF

6 PROBABLE "SHANGHAI" CLASS PTF

10 PROBABLE "MK-6" CLASS LCM

"G" CLASS SSB



SECRET
NO FOREIGN DISSEM

DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

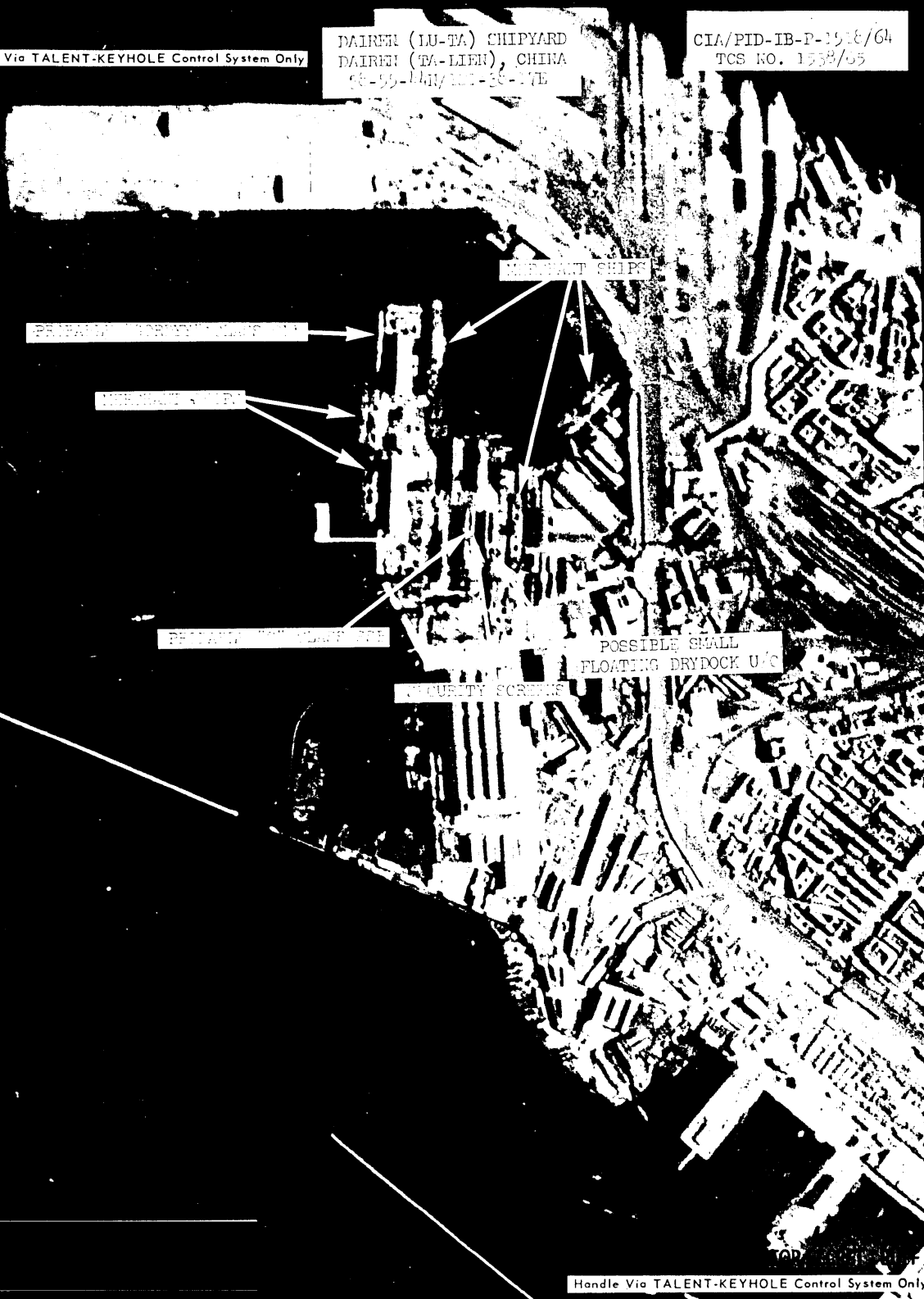
CIA/PID-IB-P-1517/64



Handle Via TALENT-KEYHOLE Control System Only

DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
68-95-144/101-38-17E

CIA/PID-IB-P-1518/64
TCS NO. 1558/65



Handle Via TALENT-KEYHOLE Control System Only

DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
8-92-111/100-88-17E

CIA/PID-IB-P-1520/64
TCS NO. 1538/65

TOP SECRET RUFF

Handle Via TALENT-KEYHOLE Control System Only

PERMANENT "GOREN" LASH-107

PERMANENT "GOREN" LASH-107

PERMANENT "GOREN" LASH-107

Handle Via TALENT-KEYHOLE Control System Only

Handle Via TALENT-KEYHOLE Control System Only

DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

CIA/PID-IB-P-1521/64
TCS NO. 1538/65

SMALL FLOATING DRYDOCK

"G" CLASS SSB (IN POSSIBLE
LAUNCHING CRADLE)

MERCHANT SHIPS

2 PROBABLE "GORDY" CLASS CRT

MERCHANT SHIP

EMPTY LAUNCHING WAY

TOP SECRET - RUFF

Handle Via TALENT-KEYHOLE Control System Only

DAIREN (LU-TA) SHIPYARD
DAIREN (TA-LIEN), CHINA
38-55-44N/121-38-17E

CIA/PID-IB-P-1523/64

"G" CLASS SSE

BRIDGE HOUSING

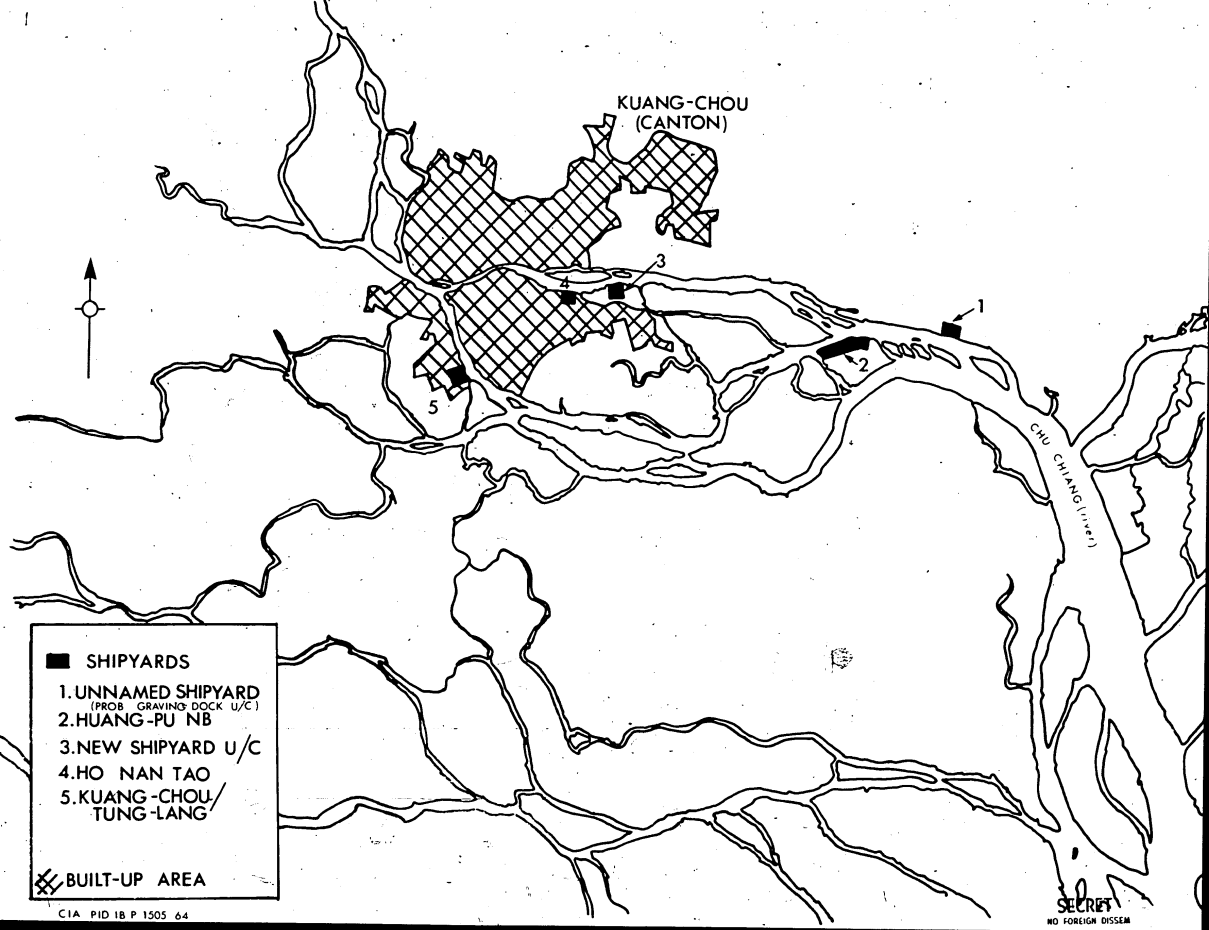
CLEAVAGES BETWEEN
MISSILE TUBE CANOPIES

PROFABLE SNORKEL EXHAUST

CLASSIFIED BY 77

KUANG-CHOU (CANTON)

SECRET
NO FOREIGN DISSEM



HUANG-PU NAVAL BASE AND SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-05-00N/113-24-45E

CIA/PID-IB-P-1527/64

BUILDING MATERIALS

25X1D

SECRET
NO FOREIGN DISSEM

HUANG-PU NAVAL BASE AND SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-05-00N/113-24-45E

CIA/PID-IB-P-1528/64



HUANG-PU NAVAL BASE AND SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-C5-00N/113-24-45E

CIA/PID-IB-P-1529/64

MACHINE SHOP/WORK SHOPS

POSSIBLE SHIP CRADLE

GRAVING DOCK



HUANG-PU NAVAL BASE AND SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-05-00N/113-24-45E

CIA/PID-IB-P-1530/64

WINCH HOUSE

U/I VESSEL UNDER WEATHER/
CONCEALMENT HUTS

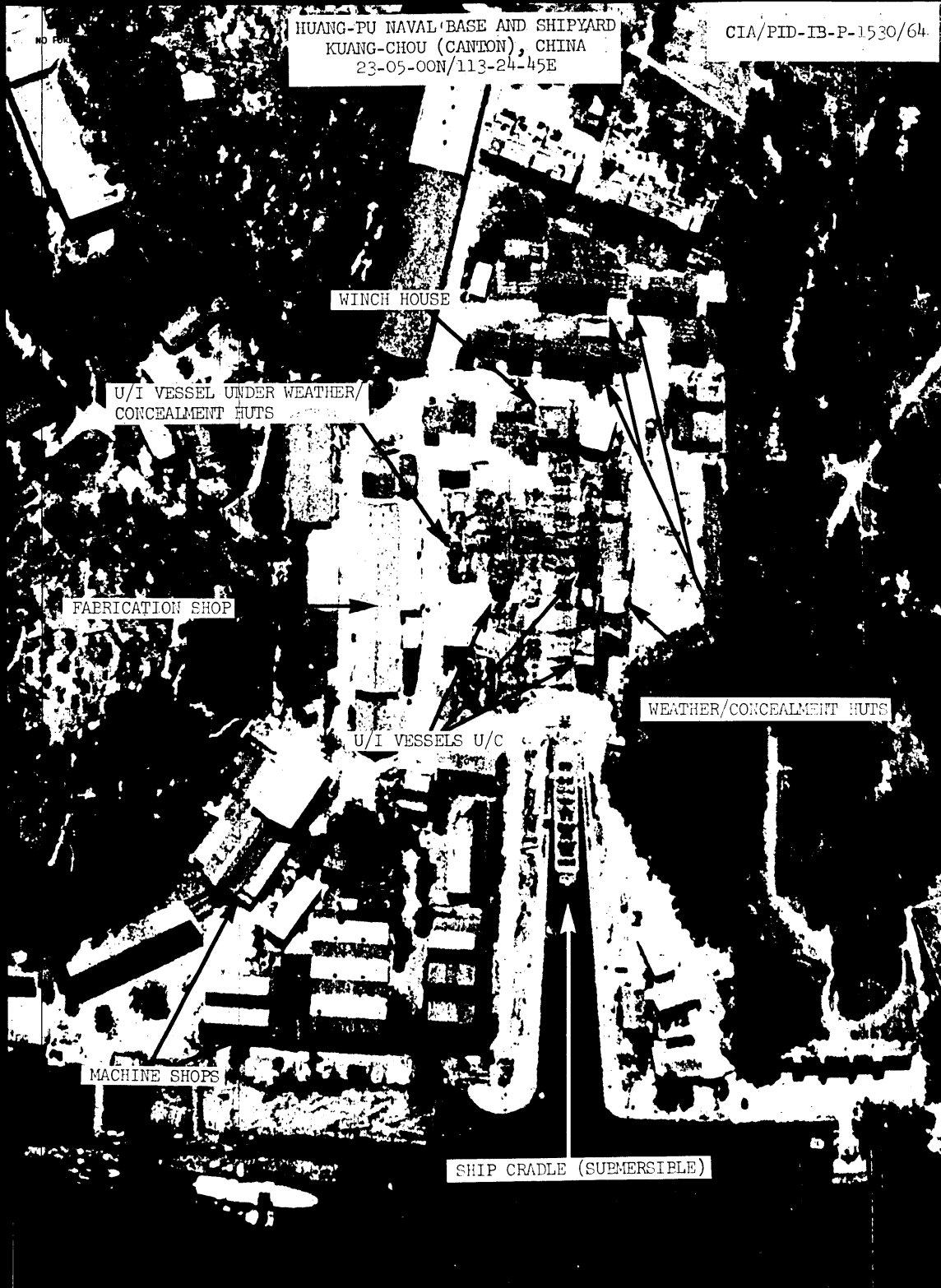
FABRICATION SHOP

WEATHER/CONCEALMENT HUTS

U/I VESSELS U/C

MACHINE SHOPS

SHIP CRADLE (SUBMERSIBLE)





SECRET

HUANG-PU NAVAL BASE AND SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-05-00N/113-24-45E

CIA/PID-IB-P-1532/64

SMALL STEEL PLANT

"SWATOW" CLASS PGM
ON NEW RAMP

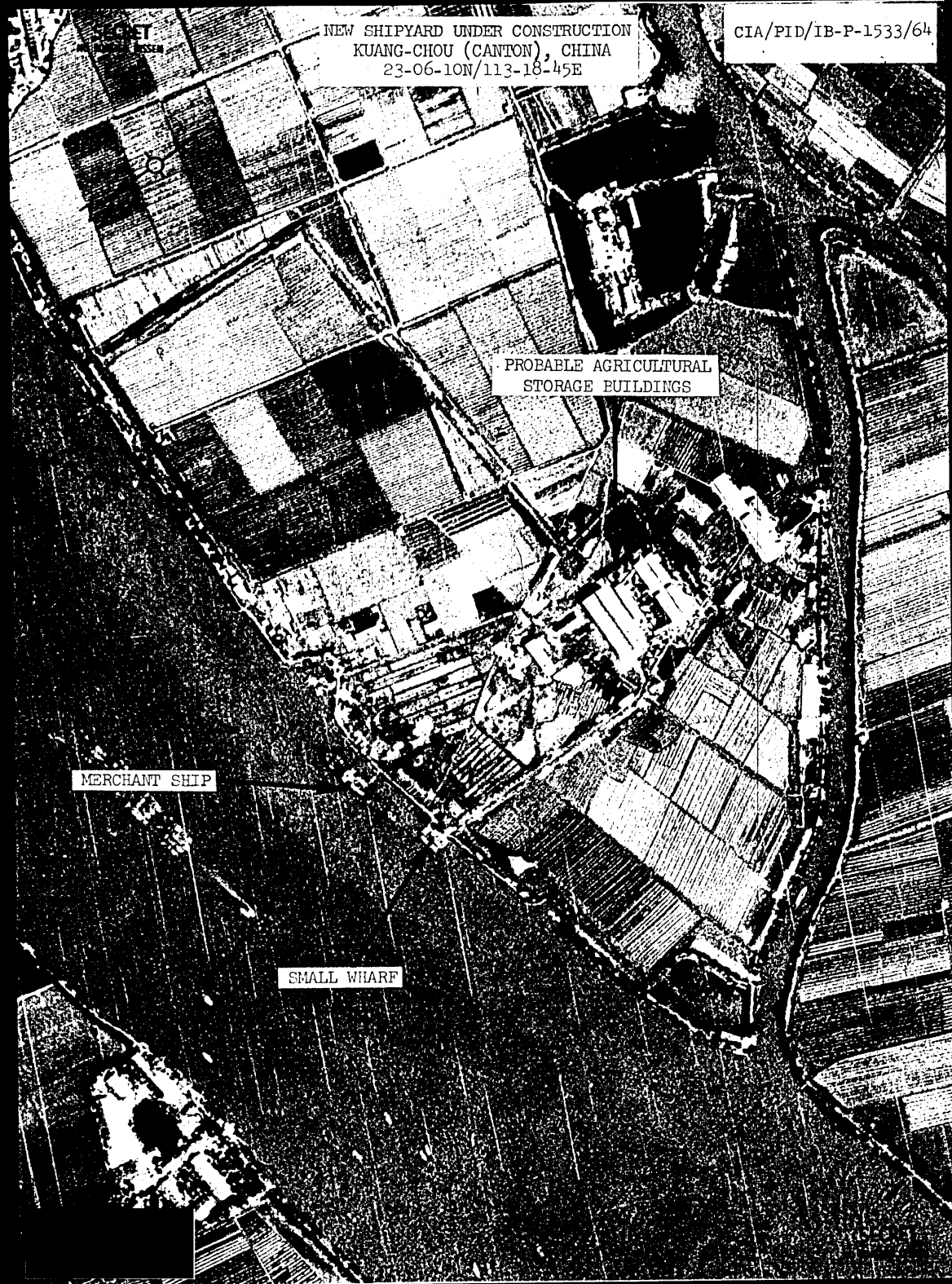
2 POSSIBLE "WHAMPOA"
CLASS YP

POSSIBLE SMALL BOAT
REPAIR YARD U/C

"SWATOW" CLASS PGM

PROBABLE "KRONSTADT"
CLASS PC





NEW SHIPYARD UNDER CONSTRUCTION
KUANG-CHOU (CANTON), CHINA
23-06-10N/113-18-45E

CIA/PID/IB-P-1533/64

PROBABLE AGRICULTURAL
STORAGE BUILDINGS

MERCHANT SHIP

SMALL WHARF

SECRET
NO FORN DISSEM

NEW SHIPYARD UNDER CONSTRUCTION
KUANG-CHOU (CANTON), CHINA
23-06-10N/113-18-45E

CIA/PID-IB-P-1534/64

PROBABLE DRAINAGE PIPELINE

FILL PILES

FORMER PROBABLE AGRICULTURAL
STORAGE BUILDING

25X15

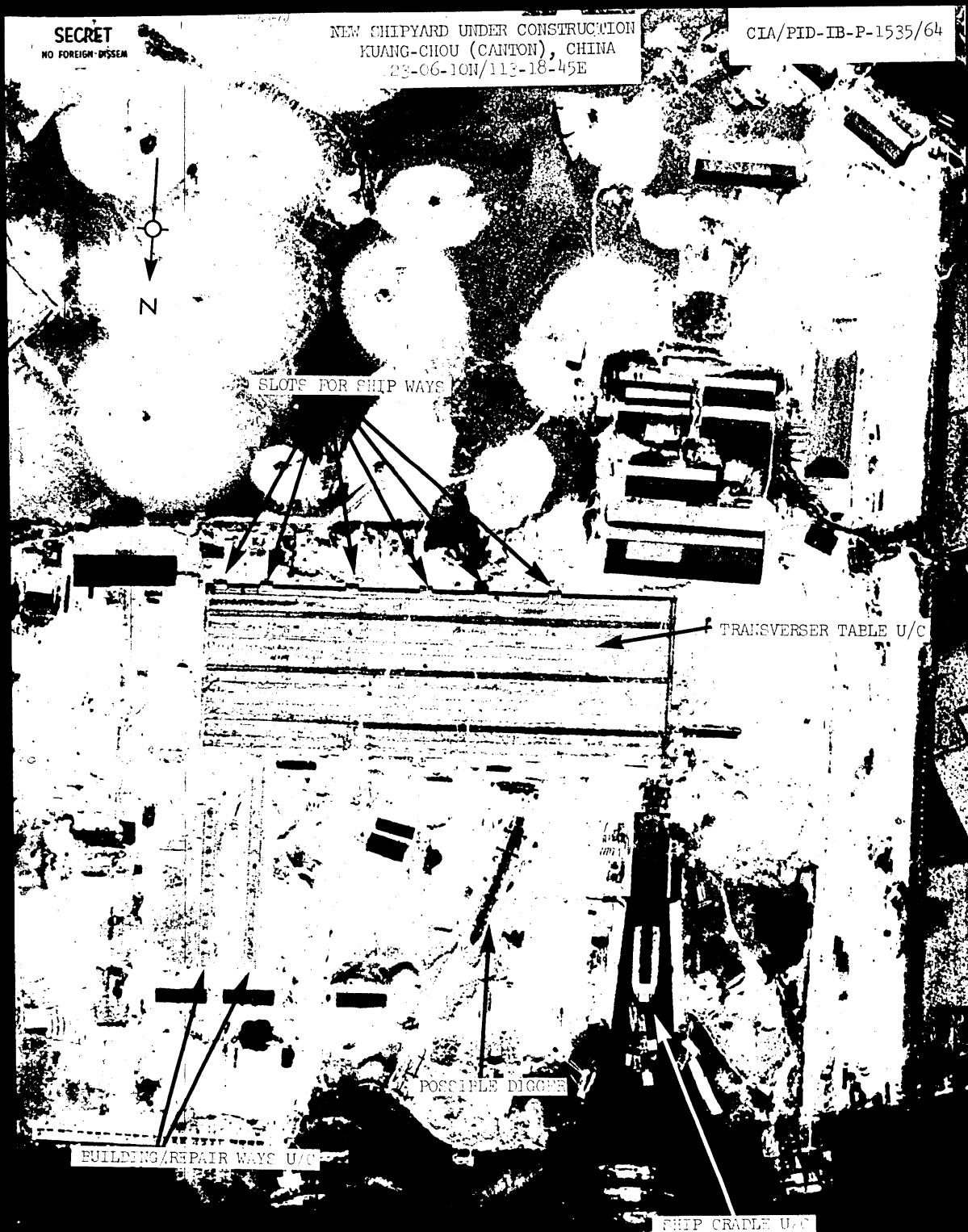


SECRET

NO FOREIGN DISSEM

NEW SHIPYARD UNDER CONSTRUCTION
KUANG-CHOU (CANTON), CHINA
23-06-10N/113-18-45E

CIA/PID-IB-P-1535/64



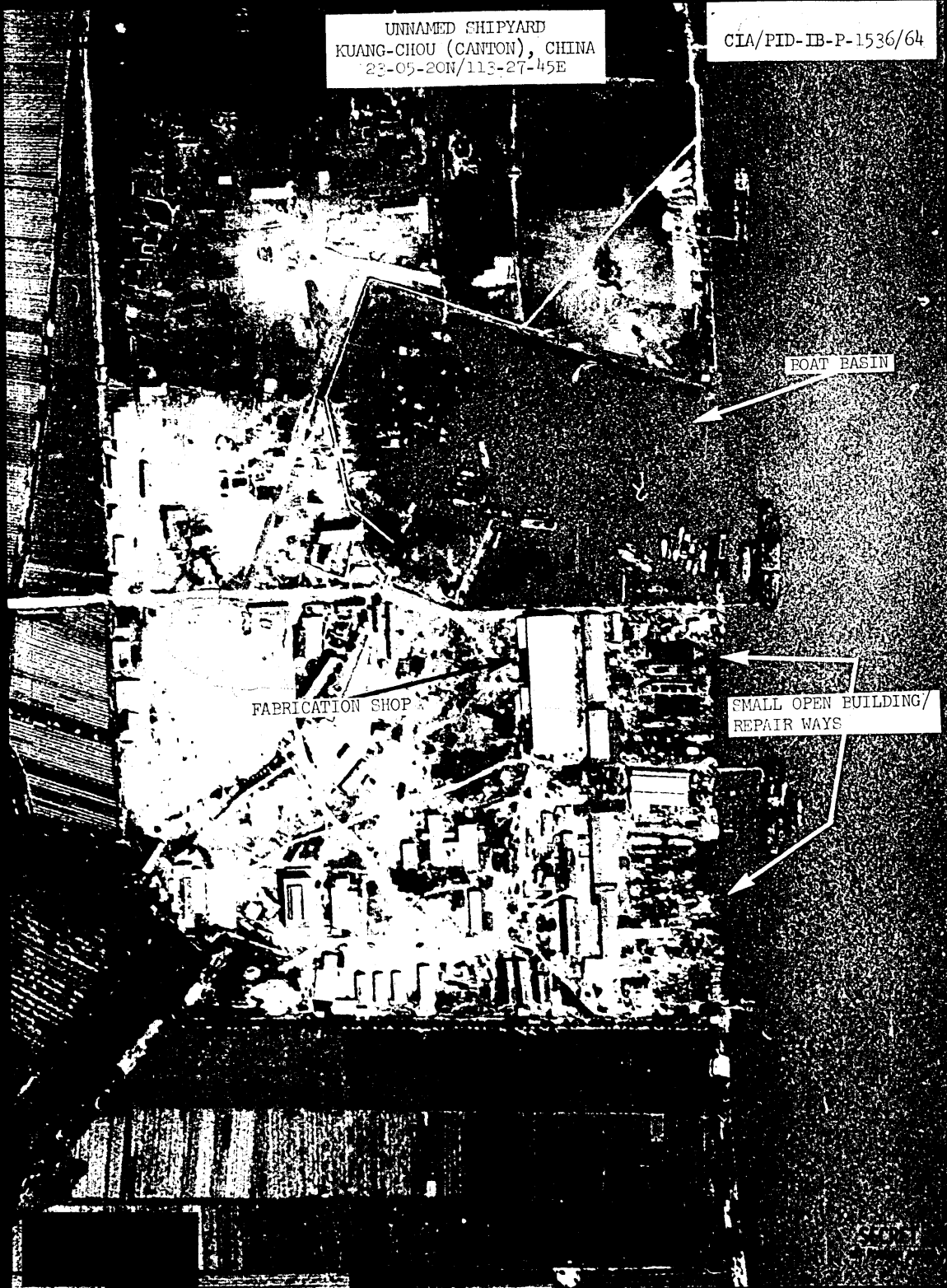
UNNAMED SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-05-20N/113-27-45E

CIA/PID-IB-P-1536/64

BOAT BASIN

FABRICATION SHOP

SMALL OPEN BUILDING/
REPAIR WAYS



UNNAMED SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-05-20N/113-27-45E

CIA/PID-IB-P-537/64

MERCHANT SHIP

PROBABLE CONCRETE
PATCHING PLANT

COFFEE MILL

PROBABLE GRAVING DOCK U/C

RECENTLY COVERED WAYS

FABRICATION SHOP

NEW PROBABLE MOLD LOFT

SECRET

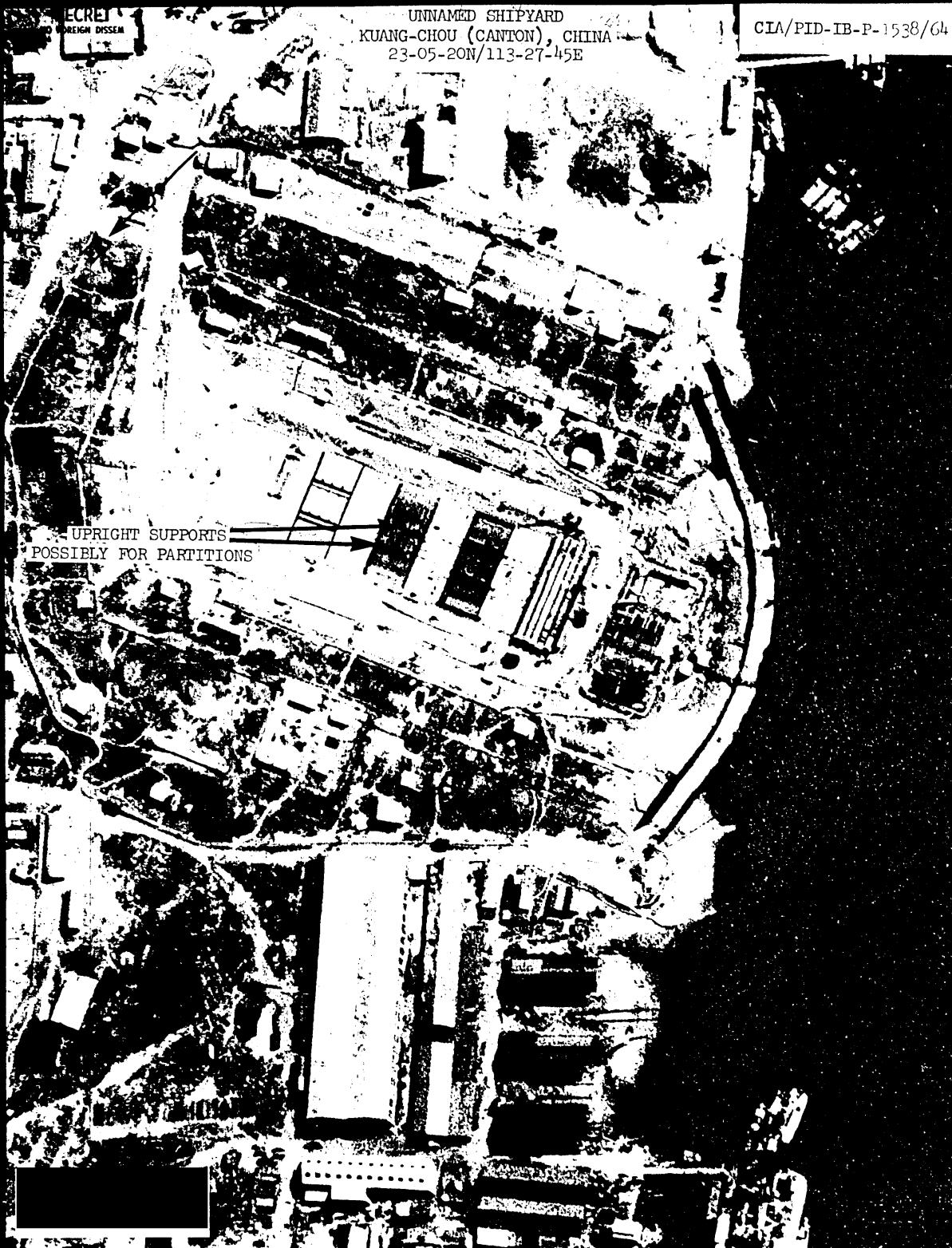
NO FOREIGN DISSEM

SECRET
FOREIGN DISSEM

UNNAMED SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-05-20N/113-27-45E

CIA/PID-IB-P-1538/64

UPRIGHT SUPPORTS
POSSIBLY FOR PARTITIONS

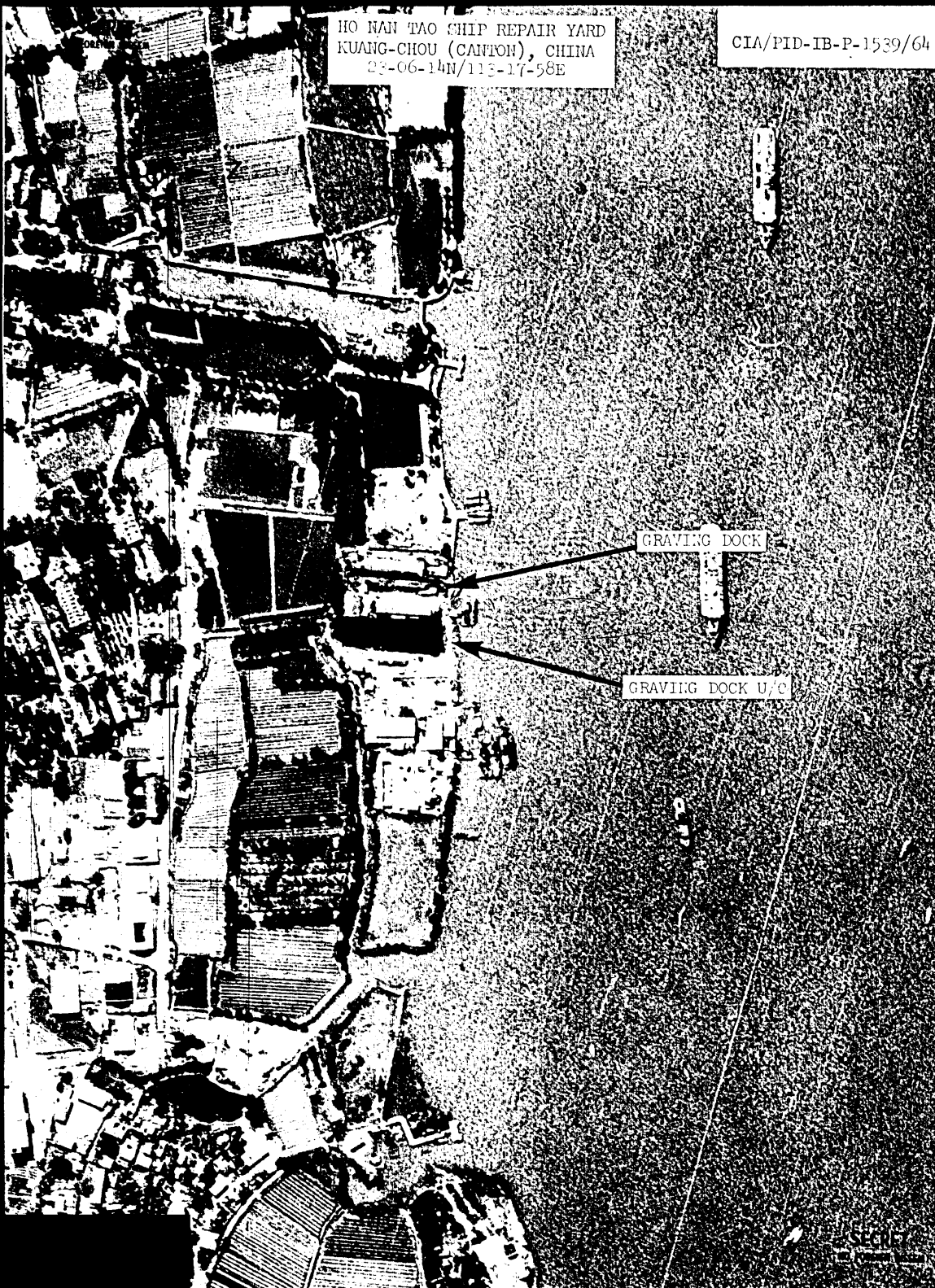


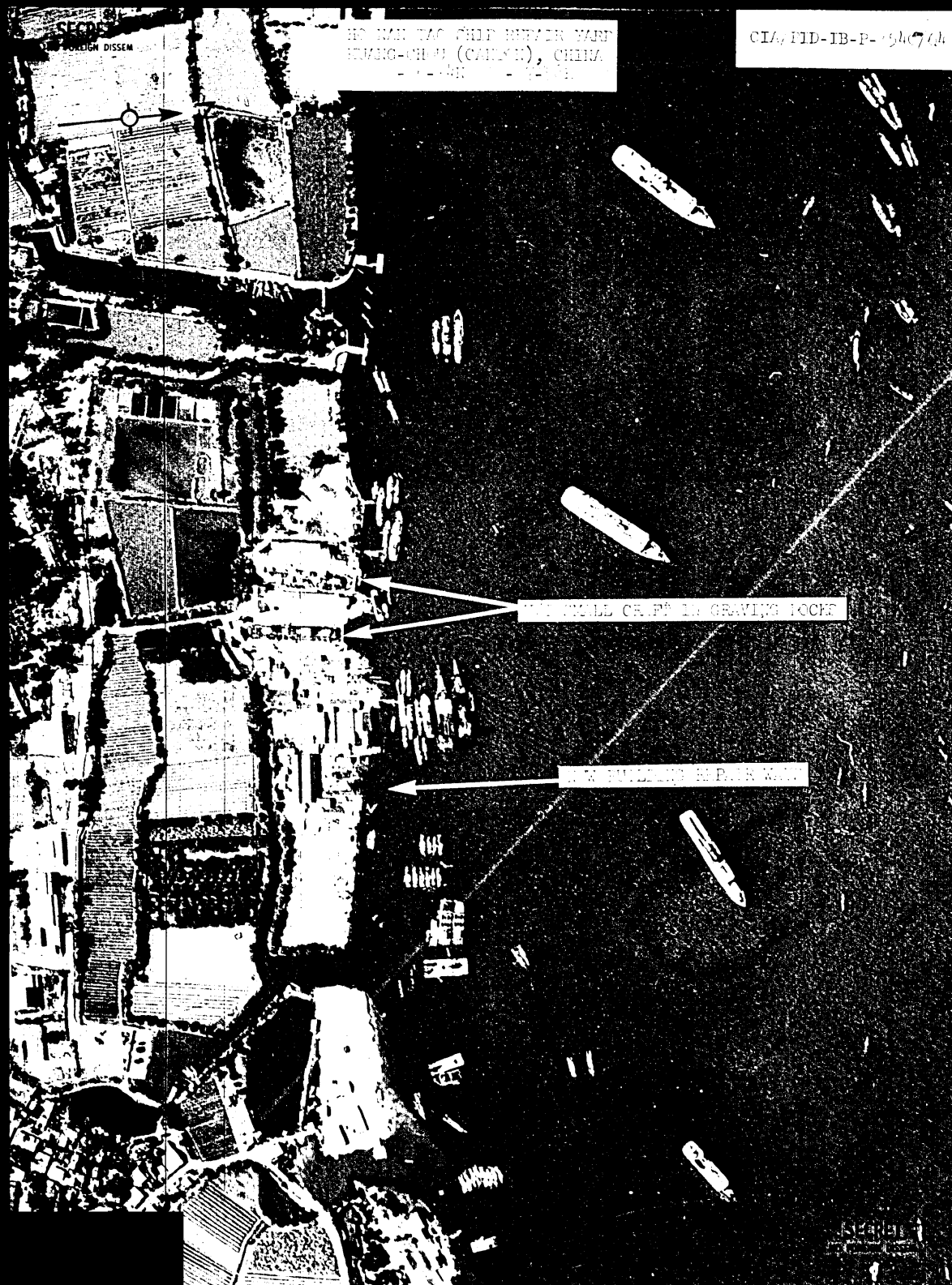
HO NAN TAO SHIP REPAIR YARD
KUANG-CHOU (CANTON), CHINA
23-06-14N/113-17-58E

CIA/PID-IB-P-1539/64

GRAVING DOCK

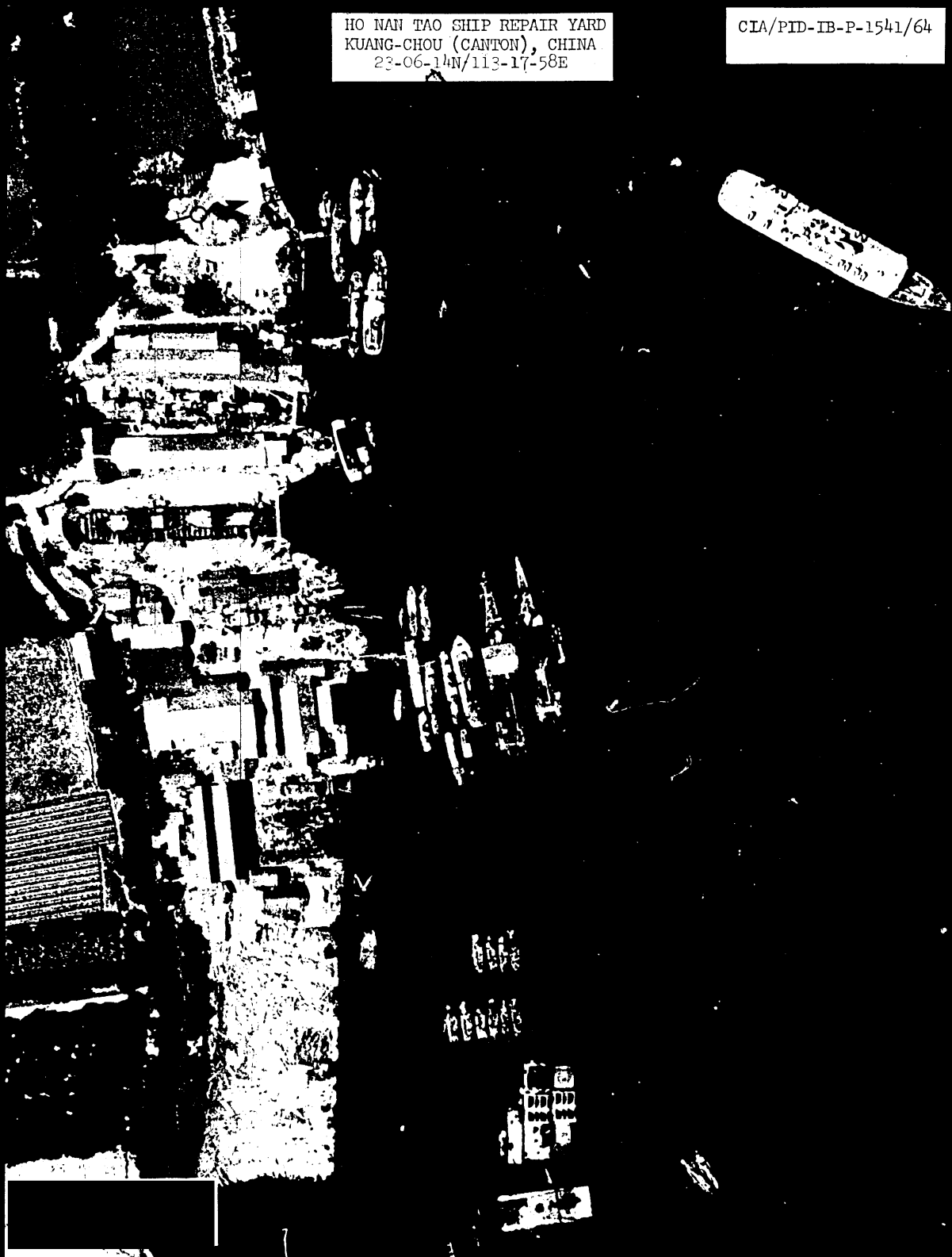
GRAVING DOCK U/C





HO NAN TAO SHIP REPAIR YARD
KUANG-CHOU (CANTON), CHINA
23-06-14N/113-17-58E

CIA/PID-IB-P-1541/64



TUNG LANG SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-04-30N/113-14-47E

CIA/PID-IB-P-1542/64

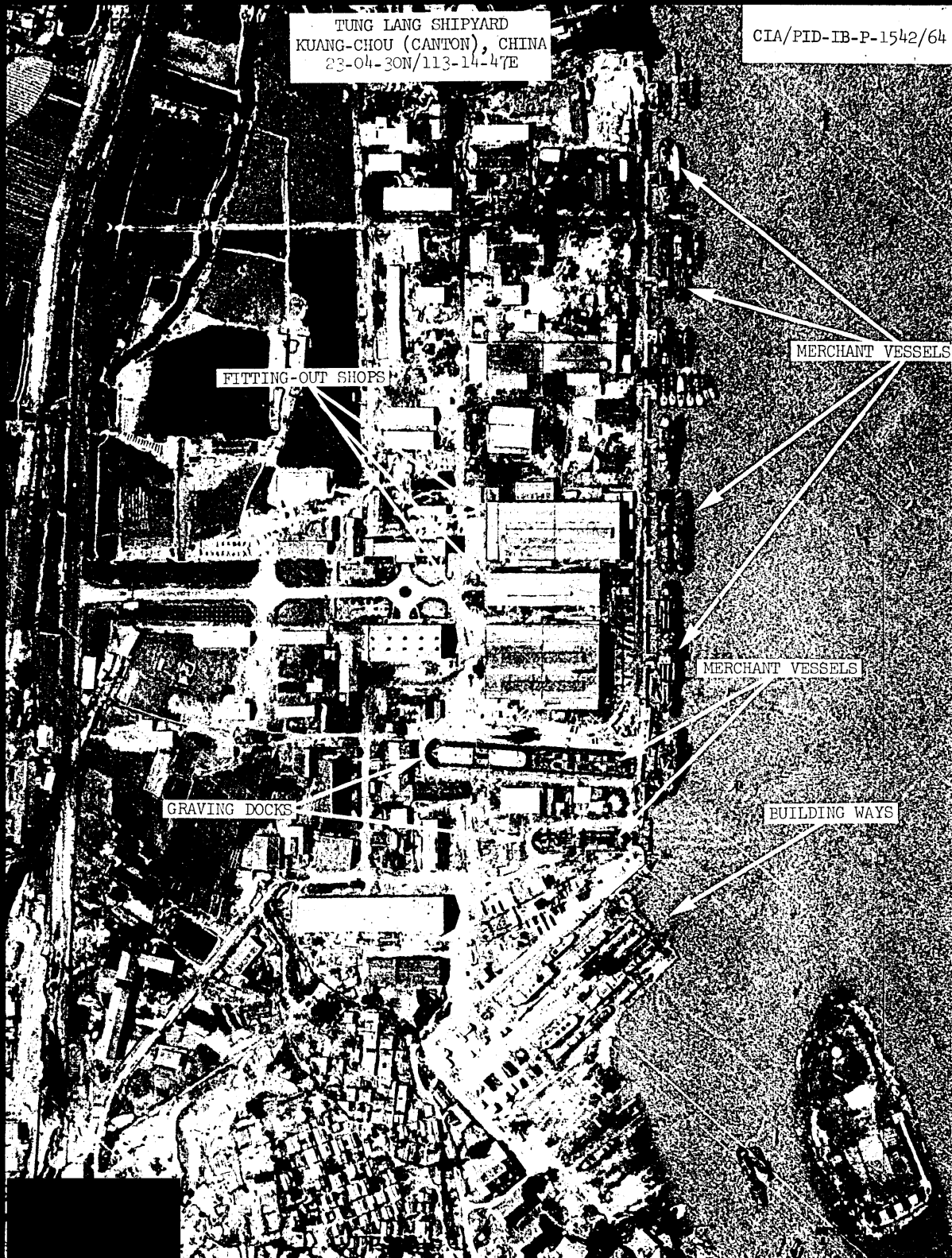
FITTING-OUT SHOPS

MERCHANT VESSELS

MERCHANT VESSELS

GRAVING DOCKS

BUILDING WAYS



TUNG LANG SHIPYARD
KUANG-CHOU (CANTON), CHINA
23-64-30N/113-14-47E

CIA/PID-IB-P-1543/64



MERCHANT VESSELS

BUILDING U/C

TUNG LANG SHIPYARD
KUANG-CHOU (CANTON), CHINA
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